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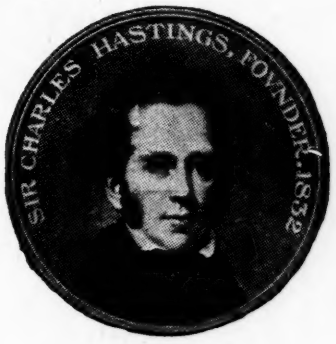

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An Address
ON THE
SINS AND SORROWS OF THE COLON.

DELIVERED BEFORE THE HARROGATE MEDICAL SOCIETY ON NOVEMBER 26TH, 1921,

BY

ARTHUR F. HURST, M.A., M.D.OXON., F.R.C.P.,
PHYSICIAN AND NEUROLOGIST TO GUY'S HOSPITAL.

THE sins of the colon are its diseases. But I sometimes wonder whether it is not more sinned against than sinning, for what with attacks from above with purges, attacks from below with douches, and frontal attacks by the surgeon, its sorrows are numerous and real. I believe that a more thorough appreciation of its normal anatomy and physiology, and the routine employment of the various methods of examination, which modern science has made available, are wanted in order that its sins may be recognized at such an early stage that treatment may lead to their complete and permanent relief.

The Motor Functions of the Colon.

Like all other hollow organs, the motor functions of the colon depend upon tone and peristalsis, which are mutually independent. An atonic stomach or colon is often referred to as if it were one in which peristalsis was deficient, but peristalsis is often very active in the presence of hypotonus, and may be weak or irregular in the presence of hypertonus. The tone of the colon depends largely upon the bulk of its contents, and varies continuously according to the amount of faeces and gas present in each segment at the moment. Owing to this the internal pressure is normally constant and only rises when its tone or the volume of its contents is pathologically excessive, pain being then produced. As the caecum and ascending colon contain large quantities of semi-fluid faeces during the greater part of the day, their tone is less and their lumen is consequently much greater than that of the rest of the large intestine, especially the descending and iliac colon, which are generally empty and consequently in a state of tonic contraction, which more or less obliterates their lumen. Thus it is quite normal to find a large and splashy caecum, when the part of the colon which can be felt in the left iliac fossa feels like an almost solid cord.

Anybody who has made frequent *x*-ray examinations after a barium meal must have been struck by the remarkable contrast afforded by the continuous peristalsis of the stomach and continuous peristalsis and segmentation of the small intestine on the one hand, and the completely motionless colon on the other. On comparing the appearance of the colon every hour through the day, I was struck by the fact that it only changed materially after those hours in which a meal had been taken. By making a screen examination at intervals of a quarter of a minute during the latter part of a meal and immediately after we were rewarded by seeing on several occasions "mass peristalsis," which had already been described by Holzknecht, and is now recognized as being the only movement of importance which occurs in the colon. Two or three times a day a powerful peristaltic wave moves rapidly along a considerable length of the bowel, carrying all the contents before it. The chief stimulus to this movement is the gastro-colic reflex, which follows the entrance of food into the empty stomach. After all of the soluble material and most of the water have been absorbed from the intestinal contents, they are carried from the caecum and ascending colon by the mass peristalsis to the pelvic colon, where they remain until the first peristaltic wave of the following morning occurs, either as a result of the stimulus of getting up and dressing or of breakfast. They are then carried into the previously empty rectum, where they give rise to the desire to defaecate, which is followed by the normal reflex process of defaecation. Consequently during the greater part of the day the caecum, ascending colon, and pelvic colon are more or less full, but the rest of the colon is generally empty.

The Radiology of the Colon.

No attempt should be made to treat a case of constipation, which does not quickly respond to simple treatment, until an *x*-ray examination has been carried out. This should not be done until the patient has discontinued the use of aperients for forty-eight hours, but, if necessary, an enema can be given the day before and again in the early morning of the day on which the examination begins.

By no other means is it possible to compare the position of the colon in the erect and horizontal postures, to determine whether adhesions are present, fixing its different segments to each other or to neighbouring structures, and to discover how quickly the intestinal contents traverse the bowel and how long their residue remains in each segment. It is, however, useless to carry out such an investigation unless the remarkable variations which may occur in normal individuals are thoroughly recognized. The times I gave in 1907 as the average rate for the passage of the intestinal contents in healthy individuals were nothing more than the average, though they have often been taken as the "normal" times, the slightest divergence from which has been regarded as pathological. Healthy individuals, however, vary within wide limits in this direction, and the position and mobility of the caecum, ascending and transverse colon are also subject to considerable variations. It is not pathological for the caecum to drop into the pelvis in the erect position, and a powerful forward in the Guy's fifteen of 1907, who had never had a day's indigestion or constipation, was only one of several perfectly healthy individuals I have seen with the greater curvation of the stomach over two inches below the umbilicus and the transverse colon reaching almost to the bottom of the pelvis.

Ptosis of the colon hardly ever gives rise to symptoms by causing kinks, and stasis in the colon must be considerable before it can be regarded as of real importance.

It is an interesting fact that more than half of the severe cases of constipation which have been sent to me in the last fifteen years have suffered from pure dyschezia, or inefficient defaecation, the passage through the intestines having been normal in rate. In such cases the only treatment required is re-education of the act of defaecation by a proper attention to the hygiene of the bowels, together with the use of graduated glycerin enemas in resistant cases. In the remaining cases stasis in the proximal part of the colon was most common; it is comparatively rare for the whole of the large intestine to be involved. An accurate diagnosis will show what form of treatment by diet, drugs, massage (given on the first occasion under the *x*-ray screen so that the exact manipulation required can be observed), exercise, and, in the case of general colonic stasis, intestinal lavage is indicated in each individual case.

Radiography after an opaque meal rarely reveals the presence of a growth in the early stage; in all suspicious cases a barium enema should be given, as this is often arrested at the seat of the tumour, but I have seen a few patients in whom this method also failed to show anything abnormal, although a growth was discovered by other means, or subsequent events showed that one was present.

Colitis and "Colitis."

Colitis is inflammation of the colon. But the term "colitis" is very frequently applied in the absence of any evidence that the colon is inflamed. I am convinced that the loose employment of the word is an important factor in the development of many cases of severe hypochondriasis. Colitis should never be diagnosed unless positive evidence of its presence is obtained by examination of the stools and by means of the sigmoidoscope. Under normal conditions the mucous membrane of the colon is kept moist by the secretion of mucus, which renders the onward passages of the faeces more easy. Like all other mucous membranes, it reacts to mechanical and chemical irritation by the secretion of excess of mucus, in order to protect its delicate lining epithelium from injury. Consequently the presence of hard faeces in the normal colon calls forth a secretion of mucus. If the faeces accumulate in the rectum, the mucus is unformed. If, however, the mucus is produced in the pelvic colon or more proximal part of the large intestine, and a thin layer of mucus remains in contact with the mucous membrane sufficiently long, a ferment, mucinase, which is present in the mucous membrane, causes it to coagulate, much in the same way as fibrinogen forms fibrin when blood coagulates. A membrane of coagulated mucus is produced, and this is subsequently passed in the form of shreds, or occasionally tubular casts of the part of the colon in which it was produced. Microscopical examination of this mucus may demonstrate the presence of desquamated epithelial cells, but there are no pus cells or other evidence of inflammation, and the sigmoidoscope invariably shows that the mucous membrane is perfectly healthy. The name "mucous or muco-membranous colitis" commonly applied to

this condition is therefore incorrect. When pain caused by spasm of the colon coexists, as it often does, the term "muco-membranous colic" might be used, but in the absence of pain the condition should not be regarded as any more pathological than the presence of a little unformed mucus with scybala which have been retained rather longer than usual in the rectum.

When mucus is present with soft or fluid faeces colitis is more likely to be present. But inquiry must first be made as to whether an aperient has been taken, because the mucous membrane also protects itself from the chemical irritation of drugs by the production of mucus. Thus the existence of colitis can only be inferred from the discovery of mucus if the faeces are unformed and no aperient has been taken.

More important than mucus is the presence of pus in the stools. This always indicates that some organic pathological condition exists. In cancer and in ulcerative colitis the pus can generally be recognized by the naked eye. If, however, it comes from the more proximal parts of the colon, it is likely to be intimately mixed with the faeces and the mucus, both of which should be examined microscopically, especially if the latter is unformed and opaque instead of transparent.

In the absence of haemorrhoids bright red blood in the stools is of equal significance. If no mucus or pus is present it probably comes from a rectal polypus, but if mucus and pus coexist acute haemorrhagic colitis, ulcerative colitis, dysentery, or cancer is almost certainly present.

Unless abdominal or digital examination of the rectum reveals the presence of a growth with certainty, a sigmoidoscopic examination should be made in every case in which the symptoms and the appearance of the stools suggest the presence of colitis or a growth.

The Sigmoidoscope.

The sigmoidoscope is one of the most valuable of all instruments used in the investigation of disease, and yet it is rarely employed except by surgeons, especially those interested in diseases of the rectum. In my opinion every physician and every practitioner should familiarize himself with the sigmoidoscope. With a little practice it can be introduced with perfect safety into the bowel of women as well as men without an anaesthetic and without causing anything more than a moderate degree of discomfort. An anaesthetic makes it impossible to assume the knee-elbow position, in which the passage round the pelvi-rectal flexure can be negotiated in almost every case without inflation, which is a matter of great importance, as inflation not only causes pain, but may also be dangerous when the wall of the colon has become thinned by ulceration.

It is no more justifiable to treat colitis without first inspecting the mucous membrane of the colon with the sigmoidoscope than it is to treat a sore throat without looking at the pharynx. I have seen numerous cases, which had been treated for months as "colitis," in which the sigmoidoscope revealed the presence of a growth. It must be remembered that the pelvi-rectal flexure, the most common place in the colon for the development of cancer with the exception of the rectum, is beyond the reach of the finger introduced per anum, and a growth here and in the lower six inches of the pelvic colon, which are also accessible to inspection with the sigmoidoscope, is often impalpable from the abdomen, although it can sometimes be felt through the front wall of the rectum or by bimanual examination.

With the sigmoidoscope, too, the various forms of colitis can be recognized, the absence of any inflammation in muco-membranous "colitis" can be demonstrated, the diagnosis between amoebic and bacillary dysentery can be made, and the process of recovery in colitis and dysentery can be watched. The symptoms of ulcerative colitis and dysentery, like those of gastric and duodenal ulcer, disappear under treatment long before the ulcers are healed. We have the great advantage in treating the former that the sigmoidoscope makes it possible to determine when the cure is really complete, and no case should be allowed to pass from active treatment until the sigmoidoscope has demonstrated that the mucous membrane is perfectly healthy. By this means alone can disappointing relapses be prevented. Only when the sigmoidoscope comes into its own will the surgeon see most cases of cancer of the pelvic colon and upper part of the rectum at the early stage, in which alone a radical cure by operation is still possible.

The Use and Abuse of Purgatives.

If the fortunes made from purgative pills had been devoted to the hospitals which treat the victims of their abuse, the financial problem of the voluntary hospitals would have been solved. About £10,000,000 was expended in 1921 on patent medicines, the majority of which contain purgatives.

I have already pointed out that the stools should be inspected and the *x*-ray examination carried out whilst no aperient is being taken. It is interesting to observe how large a proportion of patients, who are supposed to be the victims of toxaemia from intestinal stasis, feel better whilst these examinations are being carried out. The fact is that symptoms result far more frequently from the artificial diarrhoea produced by purgatives than from intestinal stasis. Purgatives often cause abdominal pain, intestinal stasis very rarely. Bacterial decomposition is very active and excess of toxins is produced and absorbed in the colon when its contents are kept fluid by the use of purgatives, but the reverse is the case in the semisolid or solid contents of the colon in intestinal stasis.

On several occasions when I have been asked to decide whether the operation of colectomy, which had been recommended for "intestinal stasis," should be performed, I have found that all the symptoms disappeared on giving up purgatives and adopting some more rational treatment. It is sad that the description Gulliver gave the Houyhnhnms of the habits of his fellow countrymen is as true to-day as it was in 1727: "They take in at the orifice above a medicine, equally annoying and disgustful to the bowels, which relaxing the belly drives down all before it; and this they call a *purge*." I do not say that an aperient should never be used, but when required, one should be chosen and a dose should be found which result in the passage of a single formed stool each morning.

Intestinal Lavage.

The mythical origin of intestinal lavage should be of interest in Harrogate, where many thousand Plombières douches are administered every year. Pliny (A.D. 77) tells how the Egyptians learnt to wash out their bowels from observing the habits of the ibis: "He washes the inside of his body by introducing water with his beak into the channel, by which our health demands that the residue of our food should leave." It is cruel to deprive the ibis of his claim to this epoch-making discovery, but the truth must be told: the ibis does not give himself a Plombières douche, but after washing his beak in water he oils it in his preen-gland, which is situated near the anus, in preparation for preening his feathers.

In the seventeenth century the enema reached the height of its popularity. It is recorded that Louis XIV received several thousand intestinal douches in the course of his life, and that the pious Duchess of Alva treated her sorely ill son with enemas of an emulsion of religious relics. Unhappily they failed to save him.

The last twenty years have seen a remarkable revival in the popularity of the intestinal douche, a popularity which has led at times to its indiscriminate use for conditions in which it was not suitable. It is a valuable remedy, but its precise indications require to be defined, and I should like to say a few words about the technique of its administration.

In the first place intestinal lavage is of use when it is necessary to remove retained faeces from a colon which, on account of its irritable or inflamed condition, ought not to be further irritated by the use of aperients. Muco-membranous "colitis" comes under this category. The fluid used should be of a non-irritating character, or a condition of catarrhal colitis will be added to the hypertonic and hypersecretory condition already present, just as the inhalation of irritant fumes produced by the burning of the powders used in asthma causes catarrhal bronchitis to be added to the simple hypertonic and hypersecretory condition of the bronchi, which is alone found in uncomplicated asthma. I had thought at one time that the Harrogate sulphur water used for intestinal lavage might sometimes act as such an irritant, but I have found by actual experiment on the healthy mucous membrane of the colon that it is no more irritating than normal saline solution. It would be interesting to know whether it owes to its radio-active or other constituents any healing properties not possessed by the latter. There is a real danger that a course of intestinal lavage in cases of this kind might lead to constipation by making the patient too dependent upon them.

For this reason patients should attempt to get their bowels open naturally each morning before they receive their douches; if this is impossible they should have paraffin, together, when necessary, with the minimal dose of senna required to produce a stool.

Secondly, intestinal lavage is of great value in the treatment of the severer forms of colitis, and especially of ulcerative colitis. Antiseptic and astringent drugs can be applied by this means directly to the mucous membrane in any required strength, without becoming diluted in the stomach and small intestines and without irritating them. The drug I have found most valuable in the local treatment of colitis is albargin, a silver nucleinate, which Rogers proved experimentally was the most satisfactory antiseptic in cases of dysentery. A solution of 1 grain to 1 ounce of water should be used.

It is of great importance that the douche should be properly administered. Nurses are always taught to pass the tube as far into the rectum as possible, and they are rarely satisfied unless twelve or more inches have been introduced. Until comparatively recently I understand that this was the practice not only in Plombières, but also in Harrogate and the other English spas in which the treatment has been employed. But the pelvi-rectal flexure, where the freely movable pelvic colon joins the fixed rectum at an acute angle, is four and a half inches from the anus, and it is a physical impossibility to pass a rubber tube beyond the flexure, except through a sigmoidoscope which has been manipulated through the flexure. This was proved long ago by Sir James Goodhart in the *post-mortem* room, and in 1908, and again more recently, I demonstrated the same fact with the *x* rays, which show that the tube turns back when the flexure is reached, and then curls up in the rectum. The end of a tube passed in the usual way must therefore rub against the mucous membrane of the rectum, and when twelve or more inches of stiff tubing are introduced into the rectum it is obvious that a considerable amount of damage may be done. This explains the observation I have frequently made, that in cases of severe colitis treated by douching through a tube introduced in the ordinary manner, the sigmoidoscope shows a pelvic colon either healed or nearly healed, whereas the whole of the rectum, which has been rubbed every day with the tube, is still acutely inflamed. The tube should therefore be introduced not more than two inches beyond the anus. The fluid should be run in slowly at a pressure not exceeding twelve inches of water, and not more than a pint and a half should be used. The *x* rays have shown that a barium enema of a pint and a half of fluid, introduced, at a pressure of twelve inches, through a tube inserted two inches beyond the anus, invariably reaches the caecum, whatever position is assumed by the patient, unless organic obstruction is present. I believe that de Graaf was correct when he wrote in his monograph, *de Clysteribus*, in 1668, that the usual ritual of lying in a series of positions during the administration of the douche has not the slightest effect. There is no doubt, however, that the knee-elbow position, by making the pelvi-rectal flexure less acute, allows the fluid to pass more readily into the pelvic colon and so prevents the overdistension of the rectum, which otherwise may make it difficult for the patient to retain the fluid for twenty or thirty minutes, as is advisable in the severe forms of colitis.

The Surgery of the Colon.

Apart from the treatment of cancer of the colon, diverticulitis, and other causes of acute and chronic obstruction, the indications for surgery in diseases of the colon are few. At one time I believed that appendicostomy or caecostomy should be performed in every case of ulcerative colitis of any severity, as Lockhart-Mummery has so persistently urged. But since I discovered that anti-dysenteric serum has such a remarkable healing effect on the disease,[1] I believe that it will in the future only be necessary to perform the operation in the exceptional cases in which no improvement follows the intravenous injection of large doses of serum.

I have always held that intestinal stasis only required surgical interference in very rare and neglected cases, in which prolonged medical treatment fails to relieve local and general symptoms of real severity. In the fifteen years I have been interested in the subject I have only recommended five patients to undergo an operation for this condition—three times short-circuiting and twice partial colectomy. One patient died, one was completely and permanently cured, and the remaining three were benefited to a varying extent. Short-circuiting of the part shown by the *x* rays to be affected, without dividing the bowel, or its excision should be performed in preference to complete colectomy. The statistics of Guy's Hospital show that the mortality in total colectomy for intestinal stasis is about 16.5 per cent. The ultimate results of the operation would require to be extremely good to justify such a high mortality, considering that with the exception of one case recorded by Lockhart-Mummery[2] intestinal stasis has never, so far as I know, proved fatal. I have come across an occasional brilliant result, but improvement is much more frequently only partial, and in many cases the patient is either no better or is actually worse than he was before the operation. It is a surgical aphorism that no operation should be performed on the stomach in the absence of a demonstrable lesion, and I look forward to the time when a similar aphorism will be applied to the colon. I have been appalled in the past to see how lightheartedly colectomy has been recommended for comparatively trivial symptoms before any serious effort has been made to treat them by other means. But it is satisfactory to note that the operation, which reached the height of its popularity shortly before the war, is gradually becoming obsolete. I was told in 1919 during my visit to Cleveland, Baltimore, and the Mayo clinic, that, after an unsatisfactory trial, colectomy was now no longer practised for intestinal stasis, and in contrast to the forty colectomies performed at Guy's in 1914 only one was performed in 1920 and not one in 1921.

A Diagnostic Clinic for Harrogate.

I have endeavoured to show how the treatment of diseases of the colon should never be undertaken before a thorough investigation has been carried out. I have not referred to various other examinations of equal importance—such, for example, as that of the secretory functions of the stomach by a fractional test meal, which may reveal the presence of achlorhydria, one of the most common causes of chronic diarrhoea, and a powerful predisposing factor to infection of the bowel.

These investigations require team-work. Each physician practising in a health resort like Harrogate should have at his disposal a diagnostic clinic, into which his patients could be admitted for ten days or a fortnight whilst he investigates them by the usual clinical methods, inspects their stools, and, when necessary, makes sigmoidoscopic examinations, whilst his radiological, biochemical, and bacteriological colleagues carry out such examinations as he may direct. At the end of this period he will be in a position to advise what treatment is required during the remainder of the patient's visit.

If possible the physicians should have no financial interest in the nursing-home side of the clinic. Patients should receive two accounts, one from the clinic and one from the physician. The latter should be an inclusive one, fixed beforehand, which should cover every examination which may be required. A certain proportion of the physician's fee should be paid to a central fund, out of which the radiographer and pathologists receive their salaries, which would thus be proportionate to the amount of work they are called upon to perform.

During the past year I have been associated with a clinic run on somewhat similar lines. Investigations have been carried out by clinicians, pathologists, and a radiographer, working as a team, and I can assure you that my work has been more interesting, less fatiguing, and more satisfactory from my own and from my patients' point of view than it ever was before. I believe that the future of medicine lies largely in the development of team-work in diagnostic and treatment clinics. In this direction Harrogate has a great opportunity. It should lead the way in establishing spa treatment on a sound scientific basis, so that those earlier days will sink into oblivion when spa treatment meant the application of spa water to the skin, the stomach, and the bowel, whatever was the matter with the patient, and Guy Patin's criticism of mineral waters, "I do not believe much in these, they never cured anybody, and I never believed that they would," was justified. Harrogate will then maintain its position as the Mecca for the sins of the colon, and will be free from any suspicion of reproach as adding to its sorrows.

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A PHYSIOLOGICAL EXPLANATION OF PAIN DUE TO FUNCTIONAL DISTURBANCE OF THE MUSCLES OF THE COLON.

BY

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It has long been known that the colon is liable to a functional disturbance of its muscular coat which consists in such a hardening of its walls as to render the outline of the bowel sufficiently distinct to suggest its forcible distension with gas. This theory, however, as to the cause of the hardening is not admissible because palpation of the colon shows that the character of the hardening and its distribution could not be explained by distension with gas, and the phenomenon must be due to some peculiar activity of the muscular coat of the bowel. This hardening is associated with pain and usually with tenderness of the hardened portions of the colon. This abnormal rigidity of the colon constitutes one of the common physical signs of the complaint known as "mucous colitis." It also occurs in the caecum in cases of appendicitis, and the tumour felt in this condition is sometimes mainly due to this cause. It may, however, occasionally occur apart from all other symptoms of disturbance of the colon, not even constipation being present.

The clinical aspects of this peculiar state of the colon wall was discussed in the International Medical Congress which was held in Paris in the year 1890. It first came under my notice in 1892, when I had a patient in whom the whole of the ascending colon from the iliac fossa to the hepatic flexure could be felt as a tube with rigid walls nearly the diameter of a woman's wrist. The case was supposed to be one of appendicitis, and the patient had had many similar attacks prior to my seeing him. The colon retained this remarkable rigidity for some days; it passed off gradually from above downwards, and when the muscular spasm had apparently ceased the hardening could, nevertheless, be sometimes felt to return for half a minute or so under the hand during palpation, the bowel rising up and forming a hard tumour the size of a small hen's egg and then softening again. It was quite clear to me that this extraordinary case demonstrated the existence of a form of muscular activity in the bowel wall which was not generally recognized, and the muscular hardening which was palpable in the colon appeared to me to be strong confirmation of the theory advanced by the late Professor Rutherford of Edinburgh that muscular fibres had not only the power of contraction but also of an extension which was a vital act on the part of the muscular tissue.

A study of this and many similar cases which have come under my notice since has been sufficient to convince me that the muscular fibres of the circular coat of the colon have the power of becoming rigid in an extended condition and of thus turning the colon into a tube with rigid walls and a definite lumen whose diameter varies in different cases and sometimes is as much as 1½ inches or more.

I have palpated the colon in the right and left iliac fossae in practically every patient I have examined during the last thirty years, and this careful examination of the muscular tone of this part of the intestine has abundantly confirmed the opinion I formed in 1892 that muscular fibres must have the power of becoming rigid in an extended condition. Until quite recently the accepted teachings of physiology have given no help whatever to the clinician so far as any explanation of this phenomenon is concerned. In the year 1915, however, Professor Sherrington contributed an important paper to *Brain* which gives an entirely satisfactory explanation of the muscular hardening which is clinically observable in the colon.

Postural Activity of Muscular Fibres.

In this paper Professor Sherrington shows that muscular fibres, in addition to the power of contraction, have another form of activity to which he applies the term "postural activity," because it plays so important a part in maintaining the posture of the body. This form of activity might be mistaken for a true tonus, but he shows that if voluntary contraction be eliminated (by removal of the cerebrum of an animal, such as a cat) the muscles are capable of exerting considerable force without any definite contractile activity. For instance, if a limb be supporting a weight, the removal of the weight will not cause any material movement of the limb, as would have been the case if the weight were being supported by contractile activity. It seems as if a muscular fibre had the power of becoming rigid in any condition of extension or contraction and of retaining this attitude for a long period of time; or, on the other hand, of varying it as necessary under nervous control. In the case of the bladder he draws attention to the fact that an almost empty bladder can be gradually distended with almost no alteration of the intravesical pressure, the muscles, while retaining the same grip upon the contents, gradually lengthening, so as to enlarge the size of the bladder.

He kindly gave me the bearing of his observations upon the question here discussed. He says:

"In their postural or tonic activity the tension of muscles or muscle fibres is largely independent of their length. Therefore a ring-muscle, for example, in the gut, may quite well assume a 'cartilaginous' hardness and yet maintain a ring-shape of any desired lumen—or if requisite might presumably obliterate its lumen. The case of the gut is quite analogous to the bladder or stomach; the musculature of these latter will exert no more pressure upon 200 c.cm. of content than on 50 c.cm. They grasp their content with the same pressure independently of the length of the muscular fibres, just as the hand can grasp an orange with the same light pressure as a walnut."

He also uses the following simile:

"Perhaps I can put the notion briefly by comparing the muscle fibre to a plaster-of-Paris brick, which would set and unset at the desire of a nerve. If a 6 inch brick were desired it flowed into a 6 inch length and there set; if a 3 inch, then it unset from the 6 inch length, became 3 inches shorter and proportionately wider, and set again. If a 9 inch brick, conversely."

In these observations of Professor Sherrington we have a perfectly satisfactory explanation of the hardening of the colon with which we are clinically familiar. We may not yet be quite certain as to the relationship between the postural activities of the colon muscles and their contractile functions, but this point is, I think, immaterial to the present argument. In the normal bowel there must be perfect co-ordination of these two types of muscular activity, otherwise a conflict between them would result. In the cases of which we are now speaking we recognize the occurrence of lack of co-ordination in consequence of an abnormal amount of postural activity interfering with the normal peristaltic contractions.

Possibility of Pain Arising in the Colon.

In such a case as this the stronger of the two types of muscular activity will overpower the weaker—an occurrence which, in the case of voluntary muscles, would be certain to give rise to pain, and the degree of pain would be proportional to the force of the opposing types of muscular activity.

In the case of the colon there is good clinical reason to believe that abnormal muscular activity of this nature is capable of giving rise to a true sensation of pain. When speaking, however, of the sensation of pain being caused by muscular conflict in the colon, we have to remember that it is devoid of nerves of common sensation, and therefore theoretically might be expected to be incapable of originating a sensation of pain. Before going farther into this question some physiological points must be considered in connexion with the relationship of the normal activities of the colon to the central nervous system.

The colon muscles are in touch with the brain through the sympathetic nervous system, and its muscular and secretory functions and blood supply are regulated by afferent and efferent impulses passing along sympathetic nerve fibres. Now muscular activities in the colon as elsewhere call for increased blood supply to the muscles concerned, and we know that increased blood supply to the splanchnic area (such as that which takes place during digestion) is associated with a certain amount of vaso-constriction of the cerebral vessels and of the arterioles of the systemic circulation. We have all experienced the mental and physical inertia which is apt to follow a full meal. We may therefore say that muscular activity in the colon (as in other parts of the alimentary tract) will give rise to certain afferent impulses which have the effect of causing relative vaso-constriction of the cerebral vessels, and which also are inhibitory to the systemic circulation.

When there is excess of postural activity the increased rigidity of the muscular wall of the colon which results from it must call for abnormally powerful contractile efforts for the accomplishment of peristalsis, quite apart from the possibility of a kind of muscular conflict taking place between the two opposed types of activity. This abnormal activity must originate abnormally powerful afferent impulses in the sympathetic nerves of the colon, and in so far as reflex

circulatory phenomena are concerned we must expect as a consequence an abnormal amount of inhibition of the cerebral circulation and also of that in the systemic muscles.

Therefore, if we take a series of patients who all show by increased hardness and by tenderness of the colon (in situations where it is palpable) that there is an abnormal amount of postural activity of its muscles we may reasonably expect them to show symptoms referable to inhibition of the normal vaso-dilatation which accompanies cerebral activity, and also of the normal vaso-dilatation in the muscles which accompanies physical exertion. In such a series of patients we do find many who show such symptoms as these. They will use some such expression as the following: "I do not know what has come over me, I seem to be losing my energy. When I sit down to write a letter or do a bit of brain work, instead of doing it as easily as usual I frequently find that I have to force myself to do it." They will speak of "brain weariness" and "mental inertia," and other symptoms suggestive of inhibition of the normal vaso-dilatation. That this is the true explanation, and that they are not suffering from ordinary neurasthenia, is shown by the fact that when by abnormal effort they have started to work (in other words, have accomplished normal cerebral vaso-dilatation) they work as easily as normal, and do not suffer from the exhaustion after the work is done which is so characteristic of a true neurasthenic state.

We also sometimes find in these patients who show excess of postural activity of the colon muscles that there are symptoms suggestive of inhibition of the vaso-dilatation which normally accompanies muscular exertion, and they will speak of lassitude and a sense of weariness, which, however, is not true exhaustion, because it will speedily pass off after a little brisk exercise. These symptoms are not usually continuous, but are more apt to come on intermittently, and are most liable to occur at times when the colon is functionally active. The early hours of the morning is apparently a time when the colon might be expected to be active in those patients in whom a morning evacuation of the bowels takes place. It is very common to find that such patients, when suffering from this functional colon disturbance, are apt to wake up of a morning (whether earlier or later) with very considerable mental depression, and when the time comes for getting up they are apt to feel distinct lassitude on muscular exertion instead of the normal absence of weariness after a night's rest. This lassitude, however, will pass off as soon as a little active exertion is undertaken, showing that it was merely of a vascular inhibitory nature, and not a true weariness.

The following is a very characteristic case where a sudden attack of mental depression would come on under circumstances which suggested that it had some reflex nervous origin, and was not a spontaneous mental phenomenon.

The subject was a dentist who came under my care for colon disturbance and whose mental troubles lessened as his colon condition improved and who has now for many years been quite free from them. I will quote his own description of the sort of attacks to which he was liable. He said: "I am sometimes enjoying a game of draughts with my wife of an evening after supper when suddenly a black cloud seems to come over me. My wife is unkind to me, my children are wicked, my practice is going to the dogs, and I am in the depths of misery till I can go to bed and sleep it off, as I can do." This same patient was liable to sudden attacks of mental depression with a suicidal tendency, so much so that when at the seaside he would not take a steamer trip unless he had some friend with him who promised never to leave him for an instant. Although happy as a rule, he felt that a sudden and uncontrollable attack of mental misery might overtake him at any minute just as a sudden attack of abdominal pain might do.

Returning to the question of pain in connexion with this functional muscular disturbance of the colon, it will readily be granted that if a muscular conflict does occur in the colon, such as has been described, the afferent impulses which would arise in the muscles concerned would be capable of causing a sensation of pain if the messages reached the sensory tracts of the cord. Now in the cases of which we are speaking pain is of frequent occurrence and of varying severity, and its clinical features are such as to confirm the theory that its causation must be the same as that of the reflex nervous symptoms of which we have spoken. For instance, as a rule the severity of the pain varies according to the amount of abnormal postural hardening (as judged by palpation) which is present in the colon. Also the pain is liable to occur at times of functional activity of the colon, just as the reflex symptoms do. Moreover, not infrequently it can be noticed that the two sets of symptoms alternate in the same patient. The following is such a case.

A patient came complaining of indigestion and abdominal pain. He said, "I sometimes have pain in my abdomen, and I sometimes have attacks of mental depression, and it is a strange thing that when I am free from pain I have much mental depression, but when I have pain in my abdomen I am free from mental depression, and am happy. I cannot understand it—it ought to be the other way round; I ought to be happy when I am free from pain and depressed when I have got it, but I am not." In this case, when the nervous impulses were transferred from the sympathetic to the sensory tracts of the cord he felt pain; when they travelled to the brain along sympathetic paths he felt mental discomfort in place of pain.

In this connexion it is of interest to note that it is occasionally possible to substitute a sensation of pain for one of mental depression by intentionally inducing pain in a tender portion of the colon. By this means the afferent impulses which formerly were finding their way to some other part of the brain, and were causing mental misery, appear to be deflected to the sensory tracts and a sensation of pain takes the place of mental discomfort. I have on one occasion myself been able to experience this transference, and I sometimes find patients who can succeed in doing so after the possibility of the success of such an attempt has been pointed out to them.

The clinical study of these cases seems therefore clearly to demonstrate that pain can be caused by the transference to the sensory tracts of the cord of afferent impulses which arose in the sympathetic system and which if retained in that system would have caused disturbance of the brain of a reflex character and would not have caused physical pain. It seems probable that when the muscular activity which originates the nervous impulse is decidedly more powerful than those due to normal digestive activity there is considerable probability of this transference taking place, and where, as in cases approaching the severity of ordinary colic, the afferent impulse is an extremely powerful one the transference of the nervous impulse from the sympathetic system to the sensory tracts of the cord almost invariably takes place and a sensation of pain is the result. With regard to the localization of the pain it is not as a rule felt over the spot where it probably arose, but is usually "referred" or "segmental" in character.

Mental Misery of Colon Origin.

The clinical study of a series of cases where mental depression and neurasthenic symptoms result from functional disturbance of the colon muscles shows that there are some cases which cannot be explained by the theory of inhibited cerebral vaso-dilatation which has already been discussed. Where the circulation alone is concerned we have pointed out that the defect can be removed by a more vigorous mental effort, just as is the case with physical lassitude which can be overcome by a more vigorous muscular effort. It is not at all unusual, however, to find cases of functional colon disturbance where the mental depression is so severe as to be wholly beyond the patient's voluntary control, and constitutes an acute mental misery which is comparable in the mental sphere to a severe physical pain in the sphere of sensation. The occurrence of such cases compels recognition of the fact that nervous impulses arising in the colon and passing to the brain along sympathetic nerve paths have the power of directly disturbing that portion (or those functions) of the brain upon which the sense of wellbeing is dependent, and of giving rise to an acute mental misery which truly represents the physical pain which they would have felt if the afferent impulse causing it had been transferred from the sympathetic to the sensory tracts of the cord. It is my custom to tell such patients that they are feeling stomach-ache in their minds instead of in their bodies.

The fact that these cases are really due to the functional disturbance in the colon is demonstrable clinically by the fact that they yield to treatment which lessens the amount of postural activity in the colon. Patients have told me that the mental cloud of which they complained began to lift within a couple of days of commencing treatment for the colon trouble.

I have said nothing as to some less usual but very striking cases of reflex disturbance due to functional colon disturbance. I have seen two cases where the reflex contraction of the systemic arterioles was sufficient to cause attacks of vasomotor angina pectoris. I have seen cases with symptoms suggestive of Raynaud's disease yield speedily to

colon treatment. I have dealt successfully with cases of reflex weeping, of reflex screaming, and of reflex asthma and other interesting cases, which were clearly due to nervous disturbances arising in the colon. These varied cases have certain features in common. They are associated with colon hardness and tenderness. Symptoms are most likely to come on during periods of functional activity of the colon or when muscular activity in the colon is liable to be started by mechanical vibration. Moreover they are cured, and often speedily, by treatment which lessens the abnormal muscular activity of the colon.

In confirmation of what has been said as to the three chief ways in which the abnormal muscular activity of the colon affects the nervous system, it would be easy for me (as soon as time is available for analysing the material at my disposal) to select, from the hundreds of cases which I have treated during the last thirty years, three parallel series of cases where the condition of the colon, the mode of occurrence of the symptoms, and the results of treatment exactly corresponded, but where in the one series the symptom complained of would be pain, in the second evidences of reflex circulatory disturbance, and in the third series mental depression or mental misery (unaccompanied by any pain) would be the only symptoms complained of, except possibly constipation.

I hope that the further study of this subject will show that these theories regarding pain which I have brought forward have a solid foundation in fact, and that a more general recognition of the part which is played by functional muscular disturbance of the colon in cases which are apparently pure neurasthenia or causeless mental depression may greatly lessen the amount of suffering now being borne by these unfortunate individuals.

TWO HUNDRED AND TWENTY-FIVE CASES OF PNEUMONIA: AN ANALYSIS.

BY

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SINCE October, 1917, I have attended 225 cases of pneumonia. I have excluded four patients, aged respectively 72, 70, 66, and 66, in whom pulmonary congestion was a contributory but not the main cause of death. I have tabulated the others etiologically as follows:

	No. of Cases.	Male.	Female.	Deaths.	Male.	Female.	Mortality per cent.
Lobar pneumonia	34	26	8	3	3	0	8.8
Bronchopneumonia:							
Primary and secondary to bronchitis	68	43	25	10	9	1	14.7
Secondary to measles and German measles	30	19	11	6	3	3	20.0
Secondary to pertussis	15	7	8	5	3	2	33.3
Secondary to pertussis *plus* measles	4	2	2	1	0	1	25.0
Secondary to acute gastro-enteritis..	1	0	1	1	0	1	100.0
Secondary to malaria	1	1	—	—	—	—	—
Influenzal (1,400 cases of influenza)...	72	38	34	6	2	4	8.3
Totals	225	136	89	32	20	12	14.2

The mortality for the series is 14.2 per cent. The youngest case was aged 3 weeks, the oldest 83 years; both recovered. Diphtheria and scarlatina do not figure in the list, and out of several hundred cases of the two diseases (endemic here) I have not seen one in which pneumonia occurred. Doubtless the mild nature of the cases as compared with former days accounts for this. I have included in the list only undoubted cases of pneumonia. Cases marked in my visiting books "? pneumonia, capillary bronchitis, etc." have been omitted, as have also many cases of prolonged influenzal pyrexia quite possibly pneumonic in nature, so that I have under- rather than over-estimated the total number of cases.

I make no claim to absolute scientific accuracy in the table, but as I have made a practice of taking notes of all cases of pneumonia I have a vivid recollection of all the cases and think I am fairly correct. Probably the cases of primary bronchopneumonias are over-estimated and those of influenza under-estimated. A large number of the cases occur in infants and young children, and unless occurring in the influenza seasons, or in houses where adult members are ill with influenza, the differential diagnosis at the lower ages must needs be very difficult.

All the patients were of the industrial class, living for the most part (five were in hospital) in overcrowded, not always overclean, houses, and had as nurse, as a rule, a harassed female already preoccupied with the needs of a large number of children. The mortality, in spite of this, seems to compare favourably with that of hospital statistics. Is it because only the worst cases are sent to hospital, or is it the journey thither?

Recurrences were noted in twelve patients, each having two attacks. I have excluded in this connexion three patients now in a state of chronic bronchopneumonia; I have credited each with one attack, their condition never having resolved. They are liable to attacks of febricula—all, in fact, have withstood influenza, and were I not cognizant of their condition I should have labelled them all influenzal pneumonia, on account of the physical signs.

A study of the cases shows that pneumonia, especially in the fatal cases, is often a disease of ill health. With the exception of the cases under one year, after the infectious diseases (and even in them a certain amount of contributory ill health can often be demonstrated) the possession of a clean bill of health is of paramount importance in the prognosis. I have little fear of pneumonia in a young, undoubtedly healthy adult. This is, of course, well recognized by all physicians, as witness the old German army statistics, mentioned by Osler, in which the death rate among 40,000 picked men was only 3.6 per cent.

Previous Morbidity of Cases.

Of my non-fatal cases phthisis definitely existed in 4. It was diagnosed (before the pneumonia) by a tuberculosis physician in 2 (I was doubtful—both now in good health); 2 were marked "? T.B. element"—both had attended previously at a tuberculosis centre; one was marked "strumous child—liable phlyctenular conjunctivitis"; one "scars neck after T.B. glands"; one "one brother phthisis, other T.B. elbow"; and one occurred in a young boy admitted to hospital for operation for "? chronic appendix or T.B. peritonitis." He developed pneumonia whilst waiting operation, which was postponed until he got stronger, and has not yet been performed. These make 12 tuberculous, or strongly suspected tuberculous, patients; 3 were recent syphilitics, well beyond the secondary stage—that is, the pneumonia was not due to the syphilis. Chronic bronchitis existed in 5, and gouty bronchitis in one. An attack of subacute rheumatism (old undoubted case of rheumatism) was followed by pneumonia in one; he was removed to hospital for treatment of the rheumatism on a cold day, and the pneumonia was due, I thought, to the removal and not to the rheumatism. One man had aortic incompetence—also old rheumatic. One infant was a congenital syphilitic baby and one rickety. Two adults were chronic alcoholics; and one boy, aged 16, a congenital idiot. These make 28 morbid cases, and to these must be added 3 (recurrence took place in 3 of the 28), which make 31 morbid cases out of 193—a percentage of 16.

Fatal Cases.

Two of these were of very tender age—one 6 weeks, the other (a twin) 11 weeks; both followed pertussis. Of the morbid conditions, one, aged 4 months, was a premature (eight months) baby; two, aged 10 and 11 months (former a twin), had "severe anaemia"; one, aged 11 months, was a congenital syphilitic, marasmic baby; one, aged 2¼ years, was a paraplegic child who had been so for three months after an attack of myelitis (not poliomyelitis), which I attributed to influenza; one, aged 26, was a dwarf with chronic bronchitis and emphysema; and one, aged 53, was a chronic asthmatic. Phthisis also played a prominent part here; 3 were definitely phthisical: the ages were 32, 25, and 4½ years. The two latter were mother and daughter, and all three were victims of the November, 1918, influenza epidemic. I might mention here that 5 out of the 6 influenza deaths were in "morbid" patients. In 3 cases phthisis was strongly suspected before the pneumonia: No. 1, aged 34 (since his death his wife and a daughter, the latter one of this series, are dead of phthisis); No. 2, aged 3¼ years, lasted for three months after pneumonia following measles *plus* pertussis, and

died of phthisis—a sister had died previously of tuberculous meningitis; No. 3, aged 16 months (his only brother had died of phthisis a year previously). Thus 13 out of 32 were "morbid" cases—that is, 40.6 per cent. These figures represent the apparent morbidity; as will be seen later, in one or two cases morbidity probably existed but was not suspected. These facts are more usefully expressed in the following table, which gives also the age incidence of all the cases. It will be seen that 50 per cent. of the deaths were in infants under 1 year, and 75 per cent. under 5 years. The apparently high mortality between 25 and 40 is explained by the high morbidity rate which existed in this series. No death took place between 5 and 25. A man, aged 48, marked "?," with no morbidity against him, was a thin and cadaverous man with whose previous history I was not familiar; also a fatal case, aged 51, was thin and pigeon-chested, but with no actual disease.

Age.	No. of Cases.	Deaths.	Mortality per cent.	No. of Fatal Cases Morbid.	Percentage Morbidity of Fatal Cases.
Under 1 year ...	39	16	41	4	25
1 to 2 years ...	29	4	13	1	25
2 to 5 ,, ...	50	4	8	3	75
5 to 25 ,, ...	61	0	*Nil*	—	—
25 to 30 ,, ...	10	2	20	2	100
30 to 40 ,, ...	15	3	20	2	66
40 to 50 ,, ...	11	1	9	?	—
50 to 60 ,, ...	6	2	33	1	50
60 to 70 ,, ...	1	0	—	—	—
70 to 80 ,, ...	2	0	—	—	—
83 years	1	0	—	—	—
Tota's ...	225	32		13	

General Features.

Of the lobar cases 5 were apical (4 right side), and of these 4 were associated with severe delirium; 1 was fatal; 5 were "central," all associated with vomiting, and "? gastric" was the diagnosis on the first visit in 4, "? pn., typhoid, or C.S.F." for several days in the other. The signs in this latter were not definite until a day or two before the crisis. I remember well wondering at the time how curious it was that three of these central cases occurred in the same street within three weeks of each other (February, 1918), and were very similar in character. I had no suspicion at the time that they were other than lobar; looking back, however, in the light of the influenza epidemics I feel they were possibly influenzal—the epidemic did not start here until late in June, 1918. I wonder, indeed, if all cases of central (so-called lobar) pneumonia are not influenzal in nature (see later). One of the lobar cases developed pericarditis and arthritis, and one empyema. The latter was the only case in which effusion was marked enough to be recognizable; two of the cases were larval, both lasting three days.

Bronchopneumonias.—One case occurred after swallowing paraffin; two were "anaesthetic"—after herniotomy and appendicectomy respectively; the latter also developed endocarditis, the former was a suspected tuberculous case. Two of the cases (fatal) took place in the influenza seasons, and were possibly influenzal.

Influenzal Pneumonias.—The physical signs varied. I have no doubt that a good many of these cases were diagnosed as bronchopneumonia and lobar pneumonia in former days, at least by the younger generation with no experience of the 1889 pandemic and before the illuminating experience of the recent pandemics. The cases were so few and far between that they escaped recognition. The central type of pneumonia (see above) was common in the recent epidemics, particularly in the epidemic early in 1922. I remember well one of the latter cases in which, on account of the bilious vomiting, dirty brown tongue, low temperature (100°), and absence of chest pain and dyspnoea, I was not certain that I was not dealing with a case of typhoid until the crisis on the seventh day; before this the signs of pneumonia were not definite. These cases would be more difficult to diagnose in the inter-epidemic periods, when the term "influenza" is not constantly ringing in the ears. Creeping pneumonia was also common. Many of the cases bore a marked clinical resemblance to lobar pneumonia. Of my 72 cases, 4 were secondary to pleurisy (primary involvement of pleura is commoner in influenza than is generally thought), 28 of the cases were unilateral—at least a diligent search found nothing on the other side. The breathing, however, was not the loud, dry breathing of lobar pneumonia, but was more distant and more "crackly." I suspected acute phthisis in not a few of the cases—a suspicion not borne out in a single case so far; a brisk haemoptysis occurred in some of the one-sided cases, and, curiously, in those in whom it occurred the pneumonia was often of short duration. In two cases of this nature the temperature dropped from 103–104° to normal on the third day, and the patients were out walking (without consulting me) on the tenth day. One of the cases developed acute appendicitis during an attack of influenza; I removed an acutely inflamed appendix and he developed double pneumonia after the operation; it resembled the influenzal cases (much heliotrope cyanosis), so I have not counted it "anaesthetic"; he recovered. One case had intense jaundice—the only one of the 225 in which this was noted. His was a creeping, asthenic pneumonia (temperature 100°) with intense delirium; he threw himself 15 feet out of his bedroom window into the garden below at 1 o'clock on a frosty November morning, his wife and sole nurse—to whom I had given orders that he must not be left a moment—being under the influence of alcohol at the time. He escaped with a few scratches and the crisis occurred two days later. Two of the cases were pregnant—one (third month) carried to term and bore a baby with congenital heart disease (? foetal endocarditis); the mother died three years later. The other (sixth month) aborted a month later and recovered.

These statistics would be incomplete if I did not state that 6 of the patients have died at varying intervals after their attacks; in 4 the pneumonia could be held responsible to some extent for the fatal ending. No. 1 died, aged 26, ten months later of delirium tremens (chronic alcoholic). No. 2 died, aged 3 years, one and a half years after from tuberculous meningitis. Tuberculosis was not suspected until the end. No. 3 died three and a half years after, aged 4½ years, of "chronic interstitial pneumonia"—possibly syphilis of lung, as child was a congenital specific. No. 4 died, aged 47, of "phthisis" three years after influenzal pneumonia when three months pregnant; tuberculosis was not suspected until after pneumonia. No. 5 died, aged 52, of "hysteria gravis" (refused food) three years later; she was examined by six doctors and no signs were found. No. 6 died, aged 10, after an interval of ten months, of "phthisis." A note at time of pneumonia read: "Pn. ? influenzal or tuberculous." Her mother is since dead of phthisis; her father died of pneumonia (suspected of tuberculosis). This case, however, developed severe diphtheria two months before death.

Treatment.

I have tried none of the vaunted specifics. The general treatment is as usual—milk, beef tea, albumin water, and plenty of cold water until after the crisis. The most useful drug, in my opinion, is ammonium carbonate—5 grains every four hours for adults and 1 grain for an infant of 1 year, and proportionately according to age. I have often seen a great improvement on the addition of this drug to the medicine, and I now give it in all cases where pneumonia is feared; it seems to act better than the sp. ammon. aromat. Strychnine and digitalis I now never use; the few early cases in which I tried them died; they seem much more useful in the cardiac debility following the crisis—why, I cannot say, unless it be that digitalis raises the blood pressure too much in the acute stage. Morphine I give only to adults, and only in the form of tinct. chlor. et morph. (*B.P.*, 1885), which is soothing without being too depressing to the respiratory centre; 10 minims are given with the carbonate. The hypodermic injection of morphine I think very harmful. I now never give morphine in any form to young children—even the use of tr. camph. co. seems to increase the cyanosis; it must be remembered, however, that the difficulties of controlling the dosage are a factor to be reckoned with in industrial practice. Brandy, I am sure, is of real benefit. I think that the use of the hypodermic syringe—with the apprehension it causes in a good many of the patients—could be done away with without any appreciable increase in the mortality resulting.

TREATMENT OF CHRONIC SYNOVITIS OF THE KNEE-JOINT.

BY

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THE question of chronic synovitis of the knee-joint is of supreme importance in the army. Men who suffer from it are not fit for work with a battalion, as they always have an ever-ready excuse for avoiding duty; although in some cases it would be possible for them to continue their work. Every R.A.M.C. officer must be familiar with this type of case, as it is quite common to find in one's surgical wards men who state that, on several occasions, their knee has been "out."

The condition of the affected knee that one commonly finds is as follows: The knee-joint is full of fluid. The vastus internus muscle is invariably wasted, sometimes to a very marked degree. The vastus internus cannot voluntarily be fully contracted; this is best explained by two diagrams representing (1) the contraction of a normal vastus internus, and (2) that associated with a chronic effusion in the knee-joint, as registered by a Marie's tambour.

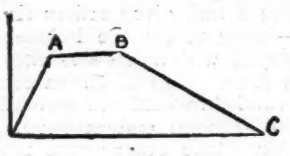

FIG. 1.

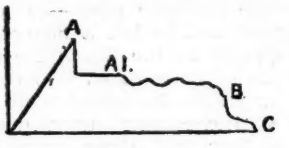

FIG. 2.

FIG. 1.—Normal contraction: A voluntary contraction rises sharply to A, and the top of the contraction curve can be maintained, A—B. Finally the relaxation of the muscle is controlled, B—C.

FIG. 2.—Contraction of vastus internus from a case of chronic effusion in the knee-joint: A voluntary contraction does not rise so sharply as in Fig. 1. There is a sudden drop, A—A1, over which the patient has no control (this can often be detected clinically). The top of the contraction curve cannot be maintained, and the relaxation is not under control.

In old-standing cases some lateral instability of the knee-joint is usually present. Tenderness on pressure may be elicited over various points around the head of the tibia. In most cases it is impossible from the indefinite history to diagnose a torn cartilage, unless the external cartilage is involved, in which case we have the true "clicking knee"—a click being felt every time the knee-joint is voluntarily fully extended—but this is rarely met with owing to the anatomical relationship of this cartilage. It is not attached to the external lateral ligament, whereas the internal cartilage is attached to the internal lateral ligament. In the majority of cases the cartilage is not at fault, and a diagnosis of this condition should not be made unless there is a very definite history of locking of the joint at the time of the original injury. Sudden locking *plus* sudden "going back" is diagnostic of a torn cartilage; if it diminishes and goes away slowly the trouble is not a cartilage. Again, a definite thickening over the anterior end of the internal cartilage *plus* pain behind the head of the fibula due to strain on the diametrically opposed portion of the capsule is due to an injured internal cartilage.

A strain of the internal lateral ligament causing an effusion into the joint is a common injury, and very often simulates a torn cartilage. A probable explanation of the clinical signs already mentioned is as follows. The knee receives a strain, an effusion into the joint takes place, and reflexly the vastus internus is thrown out of action; the reason is that the chief nerve of supply to the knee-joint is the nerve to the vastus internus, the nerve passing through that muscle and supplying it before it enters the joint. As a result of this reflex action the vastus internus rapidly wastes and loses tone, and a condition as represented in Fig. 2 is reached. By treatment the effusion is got rid of and the man returns to duty; but owing to the weakened condition of his vastus internus any small twist given to the joint again strains the knee, with the result that more fluid with further weakening of the vastus internus takes place, and so a vicious cycle is established. If, on the other hand, the vastus internus has regained its normal tone, any small twist to which the knee is subjected is at once counteracted by the voluntary bracing up of the vastus internus muscle. In the weakened type of vastus internus already referred to, this bracing action cannot take place owing to that muscle being reflexly out of action (see Fig. 2, A1).

The treatment is to break this vicious cycle, and the obvious structure to attack is the muscle. If we provide for the injured structures as large a blood supply as is possible, we are using nature's method, and in order to do this it is necessary to use the affected muscles. We have seen, however, that the vastus internus responds only weakly to a voluntary stimulus, and it is therefore necessary first to re-educate this muscle to respond to a voluntary contraction. This is done by causing the patient to keep his leg perfectly straight, in which position he is instructed to practise bracing up the vastus internus; this is done daily. In cases of severe wasting, the use of an artificial stimulus, such as is produced by a Bristow coil, is recommended, until such time as a voluntary stimulus is again exhibited. The muscles of the thigh are massaged and subjected to contrast baths of hot and cold water. This treatment very soon produces a marked increase of tone and of muscular element in the vastus internus. It is possible within a fortnight (if the treatment is conscientiously carried out) to produce an increase in girth of the thigh at this level of from 1 to 1½ inches. No marked improvement will be noticeable unless the effusion in the joint is first got rid of, and this is also done by increasing the blood supply around the joint. The fluid in this chronically inflamed joint is pathological and will be absorbed. The greater the blood supply around the joint the more rapidly will the effusion disappear, and the effusion disappears only at the same rate as the stretched fibrous capsule of the joint retracts. The required toning effect on the capsule is amply provided for by the use of contrast baths, which also favours an increase of blood supply. To increase further the blood supply in the posterior part of the joint the patient is instructed to place the sole of the foot of the same leg as the affected knee on the dorsum of the foot of the sound leg, and by opposing the ankle extensions of the sound leg against the flexions of the bad leg considerable exercise can be given to these muscles, all of which increases the blood supply around the affected joint. The patient is not confined to bed, but he is allowed only light exercise and is instructed that he is not to walk over any uneven ground. Occasionally a tight bandage over wool is applied to the joint at night.

Under this treatment the fluid disappears from the joint, and the vastus internus regains complete tone, which will prevent a further recurrence of effusion into the joint. There is one type of knee-joint occasionally met with in which all methods fail to get rid of the fluid, except aspiration. As soon as it is decided that one is dealing with a case of this kind, aspirate at once, as it is all-important to get rid of the effusion. If the fluid is due to any intra-articular condition, the effusion will recur, and this fact helps in the diagnosis of an otherwise difficult case. If an operation is to be done, the tissues to be operated on and the knee-joint have been brought to a very healthy condition by the treatment outlined. Tender spots found at the insertion of tendons about the knee-joint are due to a local effusion of the fibres at their insertion. The above treatment, by contrast baths and massage, will cause these local patches of effusion to disappear. In a series of 300 cases treated by the above method it was found that in 75 per cent. of the cases no recurrence of the effusion into the joint occurred for some time afterwards, after continued football, etc. In these cases, the original symptomatic diagnosis was altered to "strain of knee-joint." If a further effusion occurred, some intra-articular lesion was diagnosed. Care must be taken to eliminate tuberculous knee-joint, and also an effusion of the joint due to a hypertrophic infrapatellar pad of fat, in which case suitable limitation of complete extension must be provided for.

In conclusion, chronic effusion of the knee-joint is, in 75 per cent. of cases, not due to an injured cartilage, but to a strain of some structure around the joint. This can be effectively dealt with by re-education of the vastus internus, *plus* the production of as large an increase as is possible in the blood supply around the joint. This latter is obtained by (1) contrast baths; (2) limited active exercise of all muscles around the joint; and (3) massage. If this treatment is instituted in every case of chronic effusion of the knee-joint the number of operations for a so-called injured cartilage will diminish, and many men will be able to enjoy various forms of sport which they otherwise would not be able to take part in for fear of "putting out" a knee again.

NEURO-SYPHILIS WITH SEVERE LARYNGEAL CRISIS: TRACHEOTOMY.

BY

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CONSIDERATION of the symptoms presented in the case here reported points to an irritative cortical lesion as the most likely cause of the severe laryngeal crisis. The experiments of Krause, Semon, and Horsley have shown that there is a centre for adduction of the vocal cords in each cerebral hemisphere at the anterior part of the lower end of the ascending frontal convolution. Irritation of either centre results in adduction of both cords, while abduction though represented is more difficult to produce, and is rather governed from the lower centres in the floor of the fourth ventricle.

A pensioner, aged 35, was admitted about 3 a.m. on January 15th, 1922, as an urgent case suffering from respiratory embarrassment and cyanosis, having been found in this condition by the police. I saw him first about 8.15 a.m., in response to an urgent call, as his symptoms were becoming worse. He was then propped with pillows in bed in a semi-recumbent position, had a haggard and anxious expression, and looked seriously ill. The pulse was regular, 72 a minute, and of good quality and tension. Respiration seemed shallow and difficult, but there was no stridor. He was apathetic and apparently unable to raise his voice above a whisper. In a few minutes respiration ceased altogether, and his pulse then became weaker and ceased to be palpable. Tracheotomy instruments had meantime been got ready, and a low tracheotomy was then performed by a single incision of the scalpel. The tracheotomy tube was inserted without delay, but respiration did not begin, and it was noticed that there was no bleeding from the tracheotomy wound. Artificial respiration by compression of the lower ribs (Howard's method) was resorted to, and in a short time spontaneous breathing returned. A few seconds later, and before consciousness returned, there were convulsive movements of the arms and legs sufficiently violent to throw the tray with the instruments off the bed and to give some trouble to keep the patient from being jerked out of bed. He then appeared to waken up, lay down quietly, and was able to phonate quite well when the finger was placed over the tracheotomy tube. Three hours later, when I saw him again, he had lost his anxious look and expressed himself as feeling well. The tube, which had slipped out of the trachea, was replaced in position.

Examination of the larynx showed that the epiglottis was infantile in type and hid the greater part of the vocal cords. The arytenoids moved normally, and there was no oedema or other sign of abnormality. There was a superficial ulcer round the fraenum of the tongue. Knee-jerks were exaggerated, especially on the left side, and there was slight clonus of the left ankle. There was no noticeable "scanning" speech. The pupils were equal, moderately dilated, and reacted well to light. The urine contained some albumin and a trace of blood. On January 18th direct laryngoscopy with cocaine anaesthesia showed the movements of the anterior parts of the vocal cords as far as the vocal processes to be normal, but the posterior one-third moved sluggishly and did not approximate fully. There was some redness and oedema of the mucous membrane of the arytenoids and false cords, but this was considered to be due to passive congestion, and not inflammatory. There were no further laryngeal symptoms, and in ten days the tube was removed and the wound healed up. On January 30th examination revealed a painless swelling the size of a hazel nut in the left anterior pillar of the fauces. A week later this gumma had completely gone, and another had appeared at the anterior border of the right sterno-mastoid muscle, causing some pain and stiffness of movement of the neck. This also subsided within a week, leaving no trace. Dr. Douglas Adams, under whose care the patient was, has kindly supplied the following further details. He had frequent diplopia, lightning pains in legs, girdle sensation, frequency and precipitancy of micturition, difficulty in walking in the dark. The knee-jerks became slightly sluggish, but were never absent, and there was impairment of tactile sensation in the legs. The pupils continued to react actively to light. The Wassermann reaction for blood and cerebro-spinal fluid was positive. The cerebro-spinal fluid gave a normal cell count and protein content. The colloidal gold reaction showed a strong luetic curve—namely, 33221100000.

The patient was discharged from hospital on March 3rd, 1922, to continue antisyphilitic treatment, which had been confined to mercury and iodide on account of the albuminuria.

The occurrence of general convulsions during recovery in this case would be explained by extension of the irritation to neighbouring centres, as frequently occurs in laryngismus stridulus. The appearance and rapid subsidence of gummata elsewhere supports the view of a cortical lesion, while the paucity of localizing symptoms points to a gummatous formation in the *membranes* covering the cortical centre rather than in the brain substance. Had there been a lesion in the neighbourhood of the pons or fourth ventricle other cranial nerves could scarcely have escaped being involved. At the same time the possibility of early tabes has strong claims. It is known that such crises are an early—and sometimes the earliest—symptom of this disease, and that the spasmodic attacks vary greatly in frequency, occurring sometimes only two or three times in the course of years, and sometimes daily or oftener.[1] Yet a diagnosis of early tabes does not negative the probability of the laryngeal crisis in the present instance being due to an irritative cortical lesion caused by a gumma.

Another point worthy of note is the quick recovery, even after the cessation of both circulation and respiration. The question at once arises as to how soon after apparent death measures for resuscitation must be regarded as of no avail. A recent paper in the BRITISH MEDICAL JOURNAL,[2] in which among other cases one of resuscitation two hours after apparent death is recorded, is of interest in this connexion. It seems reasonable to conclude that, at least in cases where there is not an obvious cause of death, measures for resuscitation should not be lightly abandoned. Particularly does this apply in cases of sudden death under chloroform or other general anaesthetic, in which the patient is usually comparatively vigorous, and in which perhaps a rapidly performed tracheotomy followed by Howard's method of artificial respiration might be tried more often with success. Free entrance of air into the lungs is assured, there is less disturbance of the patient than with Sylvester's method of artificial respiration, while external massage of the heart is at least as efficient; and finally, it is much less drastic than direct massage of the heart through an incision into the pericardium.

I am indebted to the Minister of Pensions for permission to publish the above.

REFERENCES.

[1] Allbutt and Rolleston: *System of Medicine*, 1908 edition, pp. 280, 281.
[2] Dr. D. E. Anderson: Resuscitation after Apparent Death, BRITISH MEDICAL JOURNAL, March 11th, 1922, p. 416.

THE TREATMENT OF ASYLUM DYSENTERY BY MEANS OF ANTIDYSENTERY SERUM.

BY

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THE results in the following cases of asylum dysentery, treated at this institution during the past two years, indicate the value of antidysentery serum. The matter is of importance, since during the second half of 1921 the number of persons in mental hospitals who were attacked by the disease was 728, and of these 126 died.

The serum mainly used was supplied by Messrs. Burroughs, Wellcome, and Co., and was prepared by injecting horses with cultures of Shiga's, Flexner's, and Kruse's bacilli. In Cases 5 and 6 a serum of a similar nature prepared by Messrs. Evans, Lescher, and Webb was administered.

Case 1.—Female, aged 48. The patient, who was in an extremely debilitated state, developed diarrhoea. On the fifth day of the attack the dejecta contained blood and mucus. No previous attack of dysentery had been recorded. The milk diet was stopped and a diet of albumen water, Benger's food, and Valentine's meat juice substituted. At the same time the patient was put on a bismuth mixture and iodoform enemata. This treatment was continued for six days without improvement; 40 c.cm. of the serum were then injected into the pectoral regions. In three days' time the blood and mucus had disappeared, and the patient showed a marked physical improvement. Convalescence was somewhat gradual, but no further traces of blood or mucus were detected, although diarrhoea continued in a mild form for two weeks after the injection. There was no pyrexia during the illness. Nine months afterwards the patient developed slight diarrhoea, cardiac weakness, and pulmonary congestion, and died. At the necropsy the mucous membrane of the large intestine was much injected, but there was no ulceration.

Case 2.—Female, aged 44. For three months this patient had suffered from intermittent diarrhoea, which had been treated with salines and bismuth. Blood and mucus then appeared in the dejecta. Antidysentery serum, 45 c.cm., was administered. The dysenteric symptoms disappeared in three days' time. A week after the injection the bowels had not opened for twenty-four hours; twelve days after injection the stools were normal. No pyrexia was recorded during the course of the disease. The patient one year after treatment has had no recurrence.

Case 3.—Female, aged 21. This patient had suffered from diarrhoea for three days when blood and mucus were observed. There was slight pyrexia, ranging round 100°. Antidysentery

serum, 25 c.cm., was given hypodermically. In five days the temperature had fallen to normal and the evidences of colitis had disappeared.

Case 4.—Female, aged 46. This patient developed a severe dysenteric attack, with blood and mucus, much abdominal pain, and pyrexia up to 103°. She was given 25 c.cm. of the serum, and after five days no further looseness of the bowels was recorded.

Case 5.—Male, aged 74. This man suffered from a severe attack of dysentery with slight pyrexia. Small doses of salines were given at frequent intervals. After two days of the saline treatment no blood or mucus was observed in the dejecta, and the temperature was found to be subnormal. The diarrhoea, however, continued, and two days afterwards there was a recurrence of the pyrexia and traces of blood and mucus were again detected in the motions. The patient was then given an injection of 25 c.cm. of serum, and after an interval of two days only two evacuations were recorded in the twenty-four hours, one of which was formed. There was a marked physical improvement twenty-four hours after the administration of the serum.

Case 6.—Male, aged 72. This patient, who had two years previously suffered from dysentery, again suffered from an attack of the disease. He was at the same time suffering from pernicious anaemia in a state of remission. For the first two days there were frequent evacuations containing blood and mucus, and associated with hyperpyrexia ranging up to 105.4°. On the third day the temperature was found to be subnormal, but the colitis continued unabated. On the fourth day the temperature rose to 100° and 40 c.cm. of antidysentery serum were injected. On the following day the temperature was normal and the evacuations had decreased in number, but the blood and mucus were still present. Next day the number of motions was not diminished but blood and mucus had disappeared. In a further three days' time he had only one formed action, and shortly afterwards he was complaining bitterly of constipation.

Case 7.—Male, aged 53. This patient developed an acute dysenteric attack with a temperature ranging up to 104°. Twelve hours after the commencement of the attack 40 c.cm. of the serum were given. The temperature fell to normal within twelve hours after the injection, and during the day only three dysenteric motions were passed, although eight had been passed on the previous day. Two days afterwards he had only one formed motion.

Case 8.—Male, aged 67. This inmate suffered from a moderately severe dysentery with an even temperature of 101°. Only 25 c.cm. were used. The condition at once cleared up and at the end of a week he was again in his usual state of health.

Case 9.—Male, aged 82. This man developed dysentery at the same time as the previous case. The same treatment was used, and the course of the disease was exactly similar to that recorded under Case 8.

Case 10.—Female, aged 44. This patient was found to be suffering from a severe attack of dysentery, associated with blood and mucus, tenesmus, much abdominal pain, very frequent motions, and high pyrexia. She was given 20 c.cm. of serum daily for four successive days. The temperature had fallen to normal by the fourth day, and the tenesmus and pain had disappeared, while the number of motions had greatly decreased. By the fifth day mucus and blood had disappeared. The patient rapidly recovered, although a slight diarrhoea lasted for a week afterwards. This patient two years previously had had an attack of equal severity, which took a month to clear up under salines.

It is somewhat difficult to dogmatize on such a small number of cases, but owing to the comparative freedom of this institution from dysentery it has taken over two years to collect these records. The results are certainly of a more satisfactory nature than any obtained in this institution before the introduction of serum treatment. Apart from the rapid clearing up of the blood and mucus and the cessation of the diarrhoea, the rapid fall in the temperature and the immediate and marked physical improvement have been outstanding features.

FURTHER OBSERVATIONS UPON EXTERNAL HYDROCEPHALUS.

BY

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LOS ANGELES.

IN the BRITISH MEDICAL JOURNAL of July 16th, 1921 (p. 66), and elsewhere, I have described typical cases of acquired external (occult) hydrocephalus and the treatment adopted. These clinical pictures have been found with great constancy in numerous subsequent cases. The treatment, however, has been simplified in many cases. A striking fact has presented itself, in that congenital external hydrocephalus exhibits certain differences of character from the acquired form, and, since the operative outlook is much worse in the congenital cases, it is important to be acquainted with diagnostic methods other than the history as given by the parents.

A congenital external hydrocephalus is frequently associated with microcephaly. The reason for this is that the brain pulsation is a great factor in the normal development of cranial capacity. When there is a layer of fluid external to the brain this expansile pulsation is diminished. Curiously, the ventricles do not enlarge as a rule in external hydrocephalus, at least not to any extent. The brain instead shrinks, the skull is often arrested in development, and the subarachnoid and subdural fluid stays abundant because the foramina of Magendie, Key, and Retzius are patent, and often there is no tela choroidea or arachnoid covering the fourth ventricle at all.

Many patients have normal-sized heads, but appear mentally defective with some bulbar paresis, and varying degrees of spastic or flaccid diplegia or pantoplegia. Invariably the legs are more affected than the arms, since, next to the cerebellum, the region of greatest pressure seems to be the leg centres at the vertex where a puddle collects around the arachnoid villi, in the same way as rain collects and eddies at the mouth of a partially blocked drain. An opening in the dura in this region unless promptly closed is almost inevitably fatal in these cases, for cerebro-spinal fluid escapes in a jet and continues in spite of a vertical posture of the head and with ever-increasing frequency of respiration until the respiratory centre fails or multiple capillary cortical haemorrhages occur. The safest approach is a graduated suboccipital deduralization in chronic cases, which is also the more logical. Supratentorial measures are subsequently required in a certain proportion of cases. Many cases of so-called Little's disease are therefore not due to haemorrhage nor to trauma at the vertex, the vertical symptoms being secondary to defect in function of the basal membranes.

I operated upon a four-days-old infant suffering from continuous right-sided Jacksonian fits following a prolonged forceps labour, and found excessive clear fluid at the vertex, but no haemorrhage, as was expected. The dura was left open over the Rolandic area in this case, and the child made a perfect recovery and is now normal. Such a procedure would have been followed by a very severe reaction in a chronic case.

It is not easy to say why a uniform increase of external fluid produces a flaccid and sometimes a spastic diplegia, but, contrary to expectation, the flaccid type of this disease has often a better prognosis than the spastic. This latter fact possibly indicates that the cerebellum has been more compressed than the cerebrum in the well-nourished flaccid cases. Another point is that the congenital cases do not have fits, as far as my observation goes, whereas the acquired cases of external occult hydrocephalus always do, even when the disease has been acquired within the first few days of extra-uterine life. I believe that the congenital cases have had their fits *in utero*, or the cerebral devitalization has progressed beyond the convulsive stage before birth.

In a series of 29 cases of external hydrocephalus operated upon there has not been one with either clinical or serological signs of syphilis, nor with appreciable enlargement of the head. On the other hand, cases of internal hydrocephalus due to cerebello-medullary adhesions show a high percentage of positive Wassermann reactions, and, of course, great cranial enlargement. Such cases are scarcely worth surgical consideration.

The acute specific diseases, especially tonsillar infections, as well as birth trauma, appear to be the usual causes of primary external hydrocephalus. Without doubt, the frequent textbook statements regarding "ex vacuo" accumulations of fluid are true of local collections in certain instances, but I believe that when extracerebral fluid is general, the brain has shrunk because the fluid accumulated owing to defective powers of absorption of the basal arachnoid, and that the fluid did not accumulate to fill the vacuum left by an otherwise unaccountable atrophy of the cortex. In other words, there seems to have been a tendency in the literature to put the cart before the horse in this matter. Why the brain shrinks and the ventricles do not dilate in external hydrocephalus is purely a question of physics.

THE third conference of the International Union against Tuberculosis will be held in Brussels from July 11th to 13th. The subjects for discussion include: (1) Tuberculosis in the child, (*a*) before school age, and (*b*) during school life; (2) antituberculosis prophylaxis in the home by the visiting nurse; and (3) the work of the tuberculous during and after cure. Visits will be organized to the different antituberculosis establishments in Belgium. Those who wish to become members are requested to send their names and addresses with subscription (£1) before June 26th to the secretary, International Association for the Prevention of Tuberculosis, 20, Hanover Square, W.1.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ADDISON'S DISEASE, RAPIDLY FATAL.

THE following case is of interest on account of the well-marked signs and symptoms, and in the light of the *post-mortem* findings.

The patient, a boy aged 17, was admitted to hospital in a very exhausted condition. The skin was so dark in colour that he was thought to be a mulatto. It was stated that weakness and discoloration of the skin had begun three years before, and seemed to date from a severe attack of sickness. Both the weakness and discoloration had persisted, but had varied considerably in degree from time to time. The bronzing of the skin was noticed to be most marked always when the patient was very exhausted. He had worked only intermittently since the onset of the symptoms, but had never been confined to bed until a week before admission, when he became extremely exhausted, and complained of pains over all his body. The boy had been much troubled with headaches, but had had no sickness after the first attack three years before, and the appetite and digestion had been good; indeed the appetite had been voracious. He had complained from time to time of pain in the lower part of the abdomen on the right side. During infancy the left knee had swelled and required incision, and had not healed finally till two years later. Apart from this the child had seemed healthy. The family history was negative, except that the father suffered from bronchitis.

On admission the patient was wasted and extremely weak, but was moderately well developed. He was so light that a nurse was able to carry him down the ward in her arms. He was apathetic and dazed, and did not speak unless roused. The skin was cool, dry, and deeply bronzed. The conjunctivae were very slightly tinted. There were no enlarged glands to be felt. Round the left knee there was extensive scarring with considerable limitation of movement. The temperature was 98.2°, the pulse rate 104 a minute, and the pulse was running and of very poor quality. The blood pressure measured 64 mm. of mercury. The heart was not enlarged, and the sounds were weak but pure. A blood count showed that the red blood cells numbered 5,200,000, the haemoglobin was 95 per cent, and the white blood cells numbered 15,000. Except for flattening of the percussion note at the right apex the respiratory system appeared normal. The respirations numbered 28 a minute. The tongue was dry and furred, and the lips and teeth covered with sordes. The abdomen was retracted, and there were slight tenderness and resistance on palpation of the right iliac fossa. The liver and spleen were not enlarged. No abnormal constituents were found in the urine.

A few hours after admission the patient became very restless; the following morning he had a convulsive seizure and became unconscious. The seizure was marked especially by rigidity affecting both arms, which were flexed at the elbows, the jaws, and both legs. The head was retracted, but there was no cervical rigidity. Kernig's sign was present. There were no knee jerks, and the plantar responses were indefinite. There was no cyanosis. From time to time clonic movements of small amplitude occurred, but they gradually became less frequent; the rigidity decreased slowly, and the patient died four hours after the onset of unconsciousness.

On *post-mortem* examination the heart appeared healthy except for an almost complete absence of epicardial fat. Both lungs were extensively adherent to the chest wall, and showed limited chronic tuberculous lesions at their apices. The liver, spleen, and kidneys showed marked *post-mortem* change, but otherwise appeared normal. Neither suprarenal gland could be identified, so the whole mass of tissue above the kidney was dissected out on each side for microscopic examination. There was a caseous and calcareous gland mass lying close to the coeliac axis extending towards the left semilunar ganglion. The thymus was persistent but not prominent. The thyroid gland showed marked congestion. There was oedema of the brain.

Microscopically the thymus showed a nearly normal structure with some congestion. The thyroid showed generalized interstitial inflammatory change; the stroma showed marked cellular proliferation, while in places the colloid was eroded and vacuolated, and in other parts had disappeared; the gland had the appearance of great functional activity. The pituitary showed intense congestion but otherwise nothing of note. The tissue from the right suprarenal area was divided into several blocks, and sections examined. In none of the sections could suprarenal tissues be found. The left semilunar ganglion was embedded in fibrous tuberculous tissue, but the nerve elements showed only slight degenerative change. The tissue from the left suprarenal area was similarly treated, and two of the blocks showed isolated islands of suprarenal tissue surrounded by dense fibrous tissue and caseous material. The cells were of the cortical type, and many showed extensive vacuolization with loss of nuclear staining. No medullary suprarenal tissue was recognized.

The most interesting features of the case were: (1) The practically complete absence of suprarenal tissue and the length of time during which this condition must have existed before death occurred. (2) The marked activity of the thyroid gland, probably compensatory in nature, affording evidence of the correlation of function of the two glands. (3) The persistence of the thymus gland, in view of Wiesel's suggestion that adrenal insufficiency hinders its involution.

D

I wish to thank Professor W. K. Hunter for permission to report the case, and Dr. J. A. G. Burton for the histological details.

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COBRA BITE.

CASES of recovery from cobra bites, after manifesting all the symptoms of the effect of the venom in the central nervous system, are so rare that the following account should be placed on record:

A young Anglo-Indian employee of the Bengal-Nagpur Railway had recently captured a female cobra (*Naia tripudians*) 4 ft. 6 in. long, and on May 24th, 1921, was exhibiting it to some friends of his, when it suddenly bit him twice on the dorsal surface of his right wrist, at about 8.45 a.m. A string and handkerchief were tied tightly above the bite, and he was brought to hospital, where he was seen about 9 a.m. A rubber tourniquet was applied tightly round the forearm, and gold chloride was injected subcutaneously around the bites after they had been incised. The patient was placed in bed in hospital and two injections of antivenene, 20 c.cm. each, were administered under the skin of the abdominal wall. He was suffering agony from the constriction of the ligature and tourniquet, and the arm was getting considerably swollen. The ligatures were removed about 10 a.m, much to his relief, and I warned the nurse on duty to let me know as soon as he presented any untoward symptom. At 10.55 a.m. it was reported that he was restless and said he could not see. On examination I found that he had complete ptosis of both eyelids, he was bringing up a considerable amount of sticky saliva and mucus from his mouth, and his speech was becoming slurred. I immediately ordered antivenene to be injected intravenously, and this was done at once, 60 c.cm. being injected. From now on symptoms of paralysis developed with great rapidity. The sticky mucus increased greatly, and he vomited up bile and mucus twice; he then lost all power of speech and of swallowing, and had severe spasms. He was quite conscious all the time, and was very distressed by the constant flow of sticky mucus, which had to be swabbed out of the back of the pharynx very frequently. He lost control of his sphincter ani, and had three copious watery evacuations within an interval of ten minutes. I ordered continuous oxygen inhalation at 11.30 a.m. as the respirations had become very shallow and sighing, interrupted every few minutes by a severe spasm, during which the back became arched, after one of which respiration stopped altogether. The patient was lifted to the floor, and I had to do artificial respiration for about a quarter of an hour before the respiratory movements recommenced and became in any way regular. Once this was re-established he seemed to turn the corner. From this time (12.45 p.m.) onwards the symptom that troubled the patient most was the flow of sticky mucus; he had no more spasms. I saw him again about 2 p.m., when the respirations were still regular, but the pulse, which had been 80 to the minute, had gone up to 120, and later rose to 132. He complained by signs of great thirst, so I gave him ice to suck, which relieved him a little, but he still could not swallow water. I ordered atropine sulphate gr. 1/100 at 4.15 p.m. with the hope that it would not only stimulate the respiratory centre but also diminish the secretions. It came up to my expectations; the secretions perceptibly diminished, and the respiratory movements became deeper. The patient now started to talk again, although the speech was very slurred, and I began to hope that he would pull through. At 8 p.m. the pulse became slower, although his temperature had gone up to 102° F. At 10 p.m. he was still restless, and I ordered that another atropine injection should be given if he had any respiratory trouble. At 10.30 p.m. he complained of a severe pain over his heart and had dyspnoea, and atropine gr. 1/100 was again injected. This had an immediate beneficial effect; he slept for forty minutes, and from then onwards he did not look back. He slept off and on during the night, and by 7 a.m. on May 25th the only paralytic symptom noticeable was ptosis, which finally disappeared by 10 a.m. His only complaint now was the arm, which was very inflamed and swollen, and was sloughing where the gold chloride was injected. The sloughs subsequently came away, and afterwards a skin graft was applied; the patient was discharged from the hospital without any contraction.

In this case the cobra, which was in captivity, undoubtedly injected a lethal dose of venom into the patient, as evidenced by his symptoms, and the success attending the treatment was due to the injection of massive doses of Calmette's antivenene direct into the circulation. A contributory cause to the recovery was, I am convinced, the injection of atropine, which, so far as I know, has not previously been given in such cases. The venom of the cobra kills by paralysis of the respiratory centre, while atropine in medicinal doses stimulates the respiratory centre. All secretions from the mucous membrane and lungs are also diminished, which contributes to an appreciable extent in stimulating respiration. In this case the action of the atropine was most marked in diminishing the secretion of the saliva and the mucus of the buccal mucous membrane, and also in stimulating the respirations. I would strongly recommend its trial in addition to other remedial agents in every case of cobra bite.

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Reports of Societies.

DIATHERMY IN SURGICAL PRACTICE.

AT the meeting of the Section of Surgery of the Royal Society of Medicine on June 7th, with the President, Mr. RAYMOND JOHNSON, in the chair, a discussion took place on "Diathermy in surgical practice."

Mr. CLAYTON GREEN, in opening, said that diathermy was a method of treatment on the principle of the cautery, but with the difference that whereas with the cautery destruction was limited to the area practically in contact with the cautery point, in diathermy, as used for surgical purposes, the area of destruction was enormously increased. The chief advantage in applying this method as opposed to the cautery was the great ease with which it could be directed to growths in relatively inaccessible positions. It was his dissatisfaction with ordinary operative procedures in cancer of the tongue and floor of the mouth which led him to adopt diathermy as an alternative. In the more advanced cases it had the advantage that it did away with any question of cancer infection of the wound, it allowed destruction of a much wider area of tissue than could be obtained with the knife, and it was applicable to cases otherwise inoperable or in which an operative procedure of such magnitude would be necessary as to be extremely hazardous. It had certain disadvantages, however; in the first place, it was advisable to ligate any of the main vessels across the route traversed by the cautery. In all cases where it was necessary to remove a portion or the whole of the tongue or the floor of the mouth he invariably tied the vessels. Another disadvantage was that the wound was of the nature of a foul slough produced in a foul cavity. Although, in cases submitted to operation in the ordinary way, a certain amount of sepsis was more or less inevitable in the mouth, he admitted that the amount of sloughing appeared at first sight to be a detrimental factor in the application of this method. In the result, however, only one of his cases treated by diathermy showed any ill effects arising from this extensive sloughing. Yet another disadvantage was that the bone touched by the point of the cautery was necrosed, and the amount of time necessary for the separation of such necrosed bone was several weeks, during which time the patient had to be scrupulously careful to keep his mouth from anything which could give rise to sepsis. Again, in operating with diathermy a considerable amount of care had to be taken both by the operator and the manipulator of the machine, otherwise the patient or the operator or both might be burnt. On one occasion he burned himself considerably, and the burn took a long time to heal. He had submitted 31 cases of carcinoma of the floor of the mouth, tongue, or tonsil to operation by this method, and there were no complications, and only one death (from bronchopneumonia). He attributed the immunity from pulmonary trouble to the fact that no blood whatever trickled down the trachea into the lung. Of the 31 cases there were 6 in which there had been no recurrence, either locally or in the glands. In a certain number a local cure was effected so far as the primary focus was concerned. With few exceptions there had been alleviation. He had also applied the method to bladder trouble, though in comparatively few cases. So far as his experience went, small localized growths were efficiently treated and well controlled by intravesicular cystoscopic methods, but when the growth was larger the choice would lie between resection of the bladder wall and the destruction of the papillomata by the suprapubic opening. The latter was the method he had practised in 6 cases. The scarring of the bladder did not appear to interfere with the functioning of the ureters. He would not urge that diathermy should be adopted in preference to any other method, but he thought that it had a good deal to recommend it. In the large group of inoperable cases where the surgeon had to turn away, reluctantly admitting his inability, this method supplied a want in a most admirable manner, and gave relief where no other means of relief could be found.

Mr. DOUGLAS HARMER spoke of the treatment by diathermy of malignant growths, particularly of the upper air-passages. Ordinary excisions with the knife gave very unsatisfactory results, and with the exception possibly of cancer of the vocal cords and of the lip one could hardly be certain of curing more than one-third of the malignant cases by simple excision. With diathermy the recurrence of a growth could sometimes be prevented quite successfully even if it had failed to respond to ordinary cutting methods. Diathermy had completely altered his own opinion and that of his colleagues with regard to the treatment of carcinomas of the floor of the mouth. If these cases could be obtained before there were any palpable glands in the neck they did well; and it was surprising what good results might be obtained in cases of carcinoma of the tongue, even when very extensive. Carcinoma of the tonsil was one of the worst forms of carcinoma to be met with, but here again there was no question that with diathermy good results could be obtained, without recurrence for three or more years. In some very extensive carcinomas diathermy gave great relief of pain. Without hesitation he would declare that for this particular type of growth in the floor of the mouth diathermy was the treatment of choice. With many growths it was advisable to excise first and then treat the cavity with the button or flat plate so as to heat it up thoroughly and sterilize it completely. In cases of carcinoma of the jaw he exposed the growth freely; if there was a great mass of it he cut it away or removed with the spoon, and treated the remainder of the cavity unmercifully with the cautery. In view of the subsequent application of diathermy it did not matter that some part of the growth remained after excision, because the thorough sterilization by the cautery did away with any risk of infecting the wound. In applications to the face there was a danger that in attempting to get rid of a carcinoma inside the cheek the skin outside the cheek should be destroyed; therefore his applications were made very gently and tentatively in this region. He thought he could say that with diathermy there were no bad results. At St. Bartholomew's Hospital well over 100 cases had been treated, and the mortality was limited to two patients who had died of secondary haemorrhage; but secondary haemorrhage was no more common with this method than with ordinary cutting operations. There was certainly extensive sloughing, and the wound presented a very untidy and unpleasant appearance, but there was practically no toxaemia. The electric current also did away with the pain in a way that cutting operations failed to do. It was remarkable how it "knocked the sensory nerve sideways." Therefore it was of value in inoperable cases, if only on account of the relief of pain. The scar which was formed over the diathermic wound was invariably smooth and pliable. In certain cases of lupus where it was advisable to get a rapid recovery he had found diathermy superior to any other method of treatment; in naevi which were vascular and unsightly it was possible to bring about rapid coagulation, and so get rid of the swelling; and in certain innocent tumours such as warts, which were liable to recur if cut out with the knife, better results could be obtained with diathermy than with ordinary surgery.

Dr. E. P. CUMBERBATCH exhibited some cases to the Section, and said that he had treated by diathermy certain rodent ulcers which had resisted other forms of treatment, including ionization, x rays, and radium. One case of rodent ulcer occurred in an old woman who had been treated previously for the same condition by zinc ionization; the ionization had caused the disappearance of the ulcer, but it had recurred, and ionization then had no effect upon it whatever. Diathermy was applied, and there were no signs of recurrence now after three or four years. A case of naevi which was treated by diathermy in 1910, on the first introduction of the method to British electrotherapeutists by Nagelschmidt, was seen by him seven years later, when it had recurred, and he brought about its disappearance again by the same method.

Mr. CECIL ROWNTREE said that for some years he and his colleagues at the Cancer Hospital had been using diathermy in advanced cases of cancer. At the outset there were some technical difficulties arising from the use of an entirely new method. One question was whether the use of one or of two poles was the more satisfactory. One of his colleagues used both poles on the tumour, and, he thought, got more extensive destruction in less time, and with better ultimate results, than others who employed the unipolar method, which, however, was the more generally used. Another difficulty in treating mouth cases was the formation of vapour in the mouth, which obscured the view; and then, again, there were difficulties arising from the use of the anaesthetic and from the various gags and specula. He had met with secondary haemorrhage with no greater frequency than after ordinary operations with the knife, but there seemed always to be a fear that secondary haemorrhage might arise. He was convinced that diathermy did sometimes produce a very

intense and rapid enlargement of the glands of the neck. On two occasions when this occurred he, perhaps foolishly, tried to remove the glands, and found them converted into a pus-containing cancerous sac. There was no possible doubt as to the value of diathermy treatment in advanced cases. It relieved pain, lengthened the patient's life, and encouraged hope. In a certain number of the earlier growths it was also most valuable. He felt strongly inclined, where possible, to excise the glands and then to do the diathermy.

Mr. W. G. SPENCER said that he had had no opportunity of actually employing diathermy save in one or two exceptional cases. He could only congratulate the previous speakers upon their results, and if he deprecated what he thought were extreme views as to the value of the method it was not because he wished to minimize at all its great importance when applied in certain cases. He thought that one of the cases shown by Dr. Cumberbatch as an instance of the good results of diathermy—an epithelioma of the scalp—might have been excised with a plastic operation, which would have been a fairly simple matter. The patient now appeared to be developing an epithelioma following the diathermic scar. That was very likely to follow as a result of burning. He could not agree with the proposal to treat either by diathermy or by *x* rays or radium simple cases of rodent ulcer on the face or elsewhere. They could be excised, especially if one went deep enough, and with the plastic operation they were healed up within a week, and nothing more was to be seen of them unless the patient developed rodent ulcer elsewhere. He congratulated Mr. Harmer upon the way in which he had treated endotheliomas of the roots of the tongue and the fauces, but in the case of ulcers of the floor of the mouth he could not help wondering how they were diagnosed. Was it proposed to apply a form of cautery to an ulcer upon which a definite diagnosis had not been made? The late Sir Henry Butlin had made great efforts to protect people from cancer of the tongue by getting general practitioners to persuade their patients to have these patches cut out and submitted to microscopic examination. He deprecated the application of the cautery to these patches in the absence of such an examination. He could not agree with the application of the cautery after excision; in the case of the tongue, for example, after getting the mouth clean, it was easy to sew up the surface of the tongue, getting the healthy portion of the tongue to cover in the raw surface, and so obtain healing by first intention in the mouth, and afterwards to get a mobile tongue. He believed that diathermy was of use within certain well-defined limits; Mr. Clayton Green's application of diathermy to bladder conditions was a most important advance in surgery, but he protested against the extension of diathermy to all sorts and kinds of conditions indiscriminately.

Mr. PHILIP TURNER said that in some cases of rodent ulcer which he had treated by diathermy he had been struck by the suppleness of the scar which resulted; he had expected to find the scar so firm and hard that the patient would not be able to open his mouth. There was no doubt that for advanced cases of rodent ulcer diathermy offered the greatest promise. Many cases of early rodent ulcer would also be treated satisfactorily by this method, but in a great many of them, when the ulcers were small, excision was the simpler and quicker procedure. As for the use of diathermy in malignant disease, epithelioma of the tongue might be destroyed by a combination of surgical measures and diathermy in which any part that could not be removed by the knife should be destroyed by the cautery; but in the cases of which he had had experience there was frequent recurrence in the neck after operations in the region of the floor of the mouth. In the treatment of malignant disease the best method was early and complete removal, and this depended upon early diagnosis; but in addition to the surgical methods there were certain auxiliaries, of which diathermy was one of the most useful, and he would rank it before *x* rays or radium. With regard to accidents following diathermy, he had had one case of secondary haemorrhage and one case in which a patient had a very bad burn. He quite agreed as to the remarkable disappearance of pain after diathermic applications.

The PRESIDENT said that it had been a very enlightening discussion, though he confessed himself still in doubt whether in carcinoma of the mouth diathermy should be reserved for the cases which were to be regarded as otherwise inoperable or only amenable to very extensive operation, or should be regarded as the treatment of preference in all cases.

GENETIC ORIGIN OF DEMENTIA PRAECOX.

AT a meeting of the Medico-Psychological Association of Great Britain and Ireland, held in the rooms of the Medical Society of London, on May 25th, the President, Dr. C. HUBERT BOND, made sympathetic reference to the loss by death of Dr. Blakiston, Dr. Abbott, and Dr. James Middlemass. Of the latter he spoke in terms of high eulogy for his work on the Council of the Association, and in the compilation of the Association's *Handbook*. A resolution of sympathy was carried by members rising in their places.

Sir FREDERICK MOTT, K.B.E., F.R.S., read a paper on the genetic origin of dementia praecox, which was illustrated by micro-photographs and drawings. He began by mentioning previous publications he had made concerning the changes he had found in the cells of the central nervous system, especially the cortex, which would account for suspension or suppression of function, and consequently disintegration of the psychic unity. He assumed that the less severe changes denoting hypofunction would account for cases in which recovery or partial recovery occurred. He drew attention to the fact that he had investigated cases which began with what was diagnosed as confusional insanity and manic-depressive insanity, which had terminated in post-adolescence in dementia, and he had found in these cases a regressive atrophy of the reproductive organs similar to that found in 27 male cases of dementia praecox. He regarded all these types of psychoses as genetic in origin, and he referred to the two schools of thought in relation to dementia praecox: the psychogenic and physiogenic. According to Jung the primary cause is a psychological fault in function whose history can be traced back to childhood. The physiogenic theory which Sir Frederick Mott (based upon his researches) advocated presupposes an inherent germinal narrow physiological margin of normal functional capacity of the brain, and stresses, whether physiological, psychological, or pathological, may be sufficient to excite, reveal, or accelerate the disintegration of the psychic unity owing to the genetic inadequacy. He referred especially to the effect of emotional stress and mental conflict with repression of visible manifestations upon the endocrine glands, and the interrelation of the suprarenal, thyroid, reproductive organs, and brain. He considered that the influence of toxic agents *per se* in the product of the true psychoses was exaggerated. He next described the microscopic examination of the brain and reproductive organs of two interesting cases of dementia praecox:

The first case was a congenital imbecile with infantile uterus and ovaries, who developed symptoms of dementia at puberty. Here there was arrest of development of the supragranular layer of pyramids of the neo-cortex, with glia proliferation. This might be correlated with the ineducability of the girl. At puberty symptoms of dementia came on, and this might be correlated with a widespread degeneration of the cells of the cortex, especially of the deeper layers of pyramids and the polymorph and infragranular layer, which Shaw Bolton conceived to be connected with the vegetative and reproductive functions.

The other case was one of acute dementia praecox occurring in a highly intellectual youth, in which there was insanity on both the maternal and paternal sides. There was a marked regressive atrophy of the testes, together with the characteristic changes in the cells of the cortex. A brother who died from bullet wound of the brain also had a similar regressive atrophy of testes. A sister suffered with manic-depressive insanity.

A dictum of Hughlings Jackson, "the last to come ontogenetically the first to go," Sir Frederick Mott thought might possibly be explained by the fact that the countless millions of cells of the cortex cerebri were developed from relatively few of the protomeric cells constituting the neural tube and primary cerebral vesicles. Therefore, if there was a germinal defective formative energy, it was this part of the nervous system which was latest developed ontogenetically and phylogenetically that would be affected either by arrest of development or by an innate lack of durability. The supragranular layer of pyramids of the neo-cortex was the latest developed, and might therefore, as in the imbecile, undergo arrest of development. As the sex instinct in adolescence matured it stimulated and energized all the cells of the body, including those of the brain; but if there was a genetic inadequacy, with a narrow physiological margin of the highest level of neurones upon which to function and maintain metabolic equilibrium, then any one of the stresses mentioned might be sufficient to cause hypofunction with suspension or suppression of the normal activities of the highest and latest developed level, and disintegration of the psychic unity.

The PRESIDENT, after expressing the cordial appreciation of the paper by members, asked whether the dictum of Hughlings Jackson, which had been amply confirmed, that the faculties or functions which came last were the first to go, could be regarded as a progressive fact—that is, as era succeeded era would the more recently developed structures assume a condition of greater stability than at present?

Dr. MENZIES pointed out what seemed to him an objection to Sir Frederick Mott's theory—namely, that the Betz cells were analogous to neo-cortex, and were of late development, phylogenetically and ontogenetically, and therefore on this reasoning ought to be affected, but were not in primary dements. Moreover, the Betz axons were not myelinated.

Dr. CARSWELL spoke of the far-reaching importance of this communication in giving a true insight into the pathology of mental disease. With regard to the remarkable fact mentioned by Sir Frederick Mott that of 10,000 Serbians in the war who had had great stress and every variety of privation only five became insane as a sequel, in the speaker's large experience among the mentally afflicted in Glasgow the incidence of insanity per annum among the industrial population in a large engineering locality was the same—namely, 5 per 10,000, even though stress and strain and indulgence in alcohol were operative there too. In districts where dwelt what might be termed the sediment of the population the incidence of certifiable cases rose to 10 or 12 per 10,000. Figures such as these supported the view of those who said that for stress and strain to result in insanity there must be organic genetic defect also.

Dr. HARVEY BAIRD asked whether spermatic or ovarian extract was likely to do good in the cases referred to. In a few cases of dementia praecox he had tried it, but he could not say it was successful. Dr. MILLS asked whether the failure of the endocrine glands or the defect in the supra-marginal layers of the cortex was the greater factor in cases of dementia praecox, or were both defects correlated in the production of the condition?

Professor GEORGE ROBERTSON (Edinburgh) also warmly praised the lecturer for his contribution. He agreed that all forms of insanity appeared, at their margins, to run into one another, like the colours in the rainbow, which were not sharply demarcated but merged into the next. He was much struck by Sir Frederick Mott declaring that it was not necessarily the brain which must be investigated in these cases, reminding him of the view of the French writer Binet that the intestinal tract was largely responsible. Moreover, Bale had done a number of *post-mortem* examinations on cases dying of mental disease and found changes in the central nervous system which he regarded as the cause of the mental condition. He discussed the paper in some detail.

Sir FREDERICK MOTT, in reply, said the Betz cells, as shown by their myelination, were ontogenetically of earlier development than was the rest of the cortex. There was myelination in all the projection centres, and the sensory-motor cells must be myelinated before the association cells, as it was only at birth that an individual could have a simple sensation; later these were linked up with perceptions. In the dog's brain myelination was more developed in ten days than in the human brain in three months. It must be remembered that a cell nourished itself, it was not nourished; therefore he did not expect improvement in dementia praecox from the giving of extracts. If any were at all hopeful it would be thyroid, because the thyroid secretion originally went into the alimentary canal, and therefore it could be absorbed. Moreover, when extracts were given by the mouth, it was not definitely known what happened to them; therefore it would seem to be wiser to give them by the rectum or the vagina. The typical form of the disease under discussion was dementia simplex—loss of mind—and that he associated with degeneration of the nerve cell which was beyond repair; though many symptoms depending on hypofunction might get better.

The PRESIDENT reminded the members of the great debt the Medico-Psychological Association had already been under to Sir Frederick Mott for his various important contributions, and referred to the effect it would have upon the teaching of psychiatry, as well as on its practice. Sir Frederick was heartily thanked.

The Maudsley Lecture.

On the same day members attended at the County Hall, Spring Gardens, to hear Sir Maurice Craig deliver the Third Maudsley Lecture, the subject being "Some aspects of education and training in relation to mental disorder."

COLLAPSE THERAPY IN PULMONARY TUBERCULOSIS.

A MEETING of the Aberdeen Medico-Chirurgical Society was held in the society's hall on the evening of June 1st, with the President, Dr. SCOTT RIDDELL, in the chair, when Dr. J. M. JOHNSTONE, of Tor-na-Dee Sanatorium, read a paper on "Collapse therapy in the treatment of pulmonary tuberculosis." He explained that the main principle involved was the production of rest of a diseased lung by immobilization, and showed how the condition of collapse favoured healing by the growth of fibrous tissue, by hindering spread of the disease, by eliminating mixed infection and stopping toxaemia. After sketching the history of artificial pneumothorax he discussed the indications and contraindications in detail. He laid it down that the ideal case for pneumothorax would be one with moderate or advanced unilateral disease which had failed to respond to sanatorium treatment in a reasonable time, but that, in practice, a small active lesion or a larger quiescent lesion in the opposite lung was not an absolute contraindication. He questioned the wisdom of producing collapse in the very early stages of the disease on the ground that cure was not unlikely by other less drastic means in a shorter time, and whilst he agreed that pneumothorax might sometimes be advisable in advanced bilateral disease for the relief of symptoms it must be looked upon as palliative rather than curative. For curative pneumothorax about 5 per cent. of the general run of cases were suitable, but in only 60 to 70 per cent. of these cases could pneumothorax be successfully induced. After referring to the treatment of haemoptysis, pleurisy with or without effusion, and spontaneous pneumothorax by pneumothorax and gas replacement methods, he briefly discussed the question of how long the lung must be kept collapsed in different types of cases to allow healing to occur. Dr. Johnstone strongly advocated *x*-ray control of artificial pneumothorax treatment, especially during the induction stage. He summarized the published statistics of the general results of pneumothorax treatment and read notes of a number of cases, successful and unsuccessful, treated at Tor-na-Dee Sanatorium. Lastly, he described the operative measures which had been advocated and utilized to produce partial or complete collapse of a lung, both as alternatives or supplements to artificial pneumothorax and when pneumothorax had failed. The methods of severing adhesions preventing complete pneumothorax, the uses of phrenicotomy, extra-pleural pneumolysis, partial and complete thoracoplasty, and extra-pleural pneumothorax, were all reviewed, and cases of paraffin replacement of the upper lobe and Saugman's thoracoplastic operation were described. It was urged that all these operations could be, and should be, done under local anaesthesia in order to prevent swamping the opposite lung with discharges.

Dr. JAMES LAWSON, of Tor-na-Dee Sanatorium, dealt with the technique of the operation of artificial pneumothorax and the conduct of such a case. He described the Pearson-Lillingston apparatus and the conduct of the initial operation, laying stress on the importance of a definitely negative manometric response as an indication that the point of the needle lay between the layers of the pleura. He pointed out how the manometer might act as a minimum pressure gauge recording merely the negative pressures of inspiration, and, the needle being blocked by the visceral pleura during expiration, no oscillations occur. He showed further how deceptive negative pressures might be found in the lung when the air entry into the part punctured was restricted, and how by adding oil of peppermint to the fluid in the gas reservoir the passage of gas into the lung and air passages could be quickly detected by the patient. Attention was directed to the rise in pressure which took place in an artificial pneumothorax cavity with the change in the position of the patient from the lateral to either the dorsal or erect attitude, and how this was of importance when it was desired to re-establish a previous pressure or when excessive pressures might increase the risk of rupture of the lung, as in cases with adherent cavities. The conduct of a case he divided into three stages: First, that occupied in arriving at the optimum pressure or the lowest pressure at which the maximum degree of collapse could be attained, and he pointed out the absolute necessity of careful *x*-ray control during this period if such complications as laxity of the mediastinum were to be detected. The second stage he described as that concerned with the maintenance of the optimum pressure, and dealt

with the accumulation of fluid as the commonest complication. His experience suggested that effusions might exercise a beneficial effect, and provided satisfactory collapse could be maintained such effusions were best left alone. In the event, however, of toxic symptoms arising referable to the fluid, frequent gas replacements and possibly lavage of the cavity would be required. The third stage was that of re-expansion, which, however, Dr. Lawson was unable to deal with fully in that paper.

A discussion then ensued, taken part in by Professor ASHLEY W. MACKINTOSH, Dr. STRUTHERS STEWART of Nordrach-on-Dee Sanatorium, Sir HENRY GRAY, Mr. ALEXANDER DON, and the PRESIDENT.

Reviews.

A HANDBOOK ON VITAMINS.

Vitamins and the Choice of Food,[1] by Mrs. PLIMMER and Professor PLIMMER, is based on a course of lectures delivered by the latter in Aberdeen, and is intended to give a short summary of the vitamin problem intelligible to the general reader. The authors have produced a very interesting book in which the important and complex problems associated with the action of vitamins are dealt with very clearly; it should be intelligible to anyone possessing a slight knowledge of physiology, and medical men will find in it much that will appeal to them.

The book deals with the general properties of the three vitamins and special attention is given to the deficiency diseases, scurvy, beri-beri, rickets, and keratomalacia. Two chapters are devoted to the effects produced by diets deficient in various amino-acids and to the relation between pellagra and qualitative deficiency in proteins. These chapters are particularly interesting and we are not aware that the information collected in them can be found elsewhere in a readily accessible form. The final chapters deal with the effects produced by partial vitamin deficiency and with the general question of errors in the choice of food. A point of special merit in the book is that full emphasis is laid on the facts that have been definitely established about vitamins, and the enormous social importance of deficiency diseases is properly insisted on.

Most of our knowledge of vitamins is recent and many interesting questions are still matters of controversy; there is always a tendency to overemphasize controversial points by devoting undue space to them, and in this way the impression may be produced that a subject is in a much more unsettled state than it really is. The authors have avoided this error very well, and bring into clear relief the enormous importance of the part that deficiency diseases have played in the history of the world. Most medical men will probably be surprised by the extent of the ravages of the deficiency diseases which this book records. Vitamins are sometimes spoken of as fads, and it is well to be reminded of the essential fact that deficiency diseases have destroyed armies and navies and have ruined empires in the past; millions of lives have been lost that could have been saved had our present knowledge been available.

One of the penalties of writing a short and readable account of a new and growing subject is that it is necessary to dogmatize upon matters that are still uncertain, or at any rate to simplify unduly problems which are really complex. The authors in this book treat rickets as a disease simply due to deficiency of vitamin A; there is no doubt that often this deficiency is an important factor in the production of rickets, but several other factors such as faulty mineral metabolism and lack of sunlight also appear to play an important part. However, it is almost impossible to produce a really readable book for non-experts in this subject, and yet to go fully into matters of controversy.

SERUM BY THE MOUTH.

Hormone Therapy by Sera, Vaccines, and Drugs,[2] by Dr. D. MONTGOMERIE PATON of Melbourne, is a remarkable book, whether or not the reader can agree with its contents, for it represents the experience with the oral administration of antidiphtherial serum in various diseases by a busy practitioner during twenty-three years. It is indeed a restatement and expansion of the author's *New Serum Treatment* published in 1906, a work which we are told constitutes his claim to be the pioneer in non-specific immunity. He contends that serum contains the secretions of the ductless glands, and that these are absorbed, whereas contained antitoxins, as in antidiphtherial serum, are not, when the serum is taken by the mouth. Further, vaccines and the drugs emetine and cantharidin lead to increased secretion by the ductless glands, and thus are of use in hormone therapy. He states that when the antitoxin in antidiphtherial serum has reached 200 to 250 units per cubic centimetre the hormones in it are practically at full strength, and that antidiphtherial serum has a much more intensive recuperative power on all tissues than normal serum. In connexion with the hormone-producing power of a streptococcic vaccine it is stated that the simultaneous administration of potassium iodide "vastly widened the sphere of action, and from the results obtained it seemed to do this by the iodide restraining the action of the suprarenal glands, and so enabling the thyroid to do its work in certain directions unhampered by the opposition of the suprarenals"; this is a somewhat novel view, and the mention of "an antidiphtheria serum grown on a culture of normal serum" (p. 98) suggests a slip of the pen. But although the author's hypothesis may not be acceptable or appear to be proved, his empirical results are interesting; emetine hydrochloride is, he says, a specific for alcoholism, and has a well-marked action on the tobacco habit; thus a neurotic "cigarette fiend" entirely stopped smoking, and another was puzzled why he could only smoke 2 oz. instead of his usual 4 oz. a week.

THE ETIOLOGY OF TYPHUS FEVER.

THE volume entitled *The Etiology and Pathology of Typhus*[3] represents the main report of the Typhus Research Commission of the League of Red Cross Societies to Poland. It has been compiled by Dr. S. BURT WOLBACH and Dr. JOHN L. TODD, the joint heads, with Dr. FRANCIS W. PALFREY, the clinical chief of the commission, and records the clinical and pathological researches made by them during their stay in Warsaw from January to August, 1920. The book is appropriately dedicated to the memory of the investigators who contracted a fatal attack of typhus fever as the result of their researches—namely, Corneff, Cornet, Jochmann, Lüthje, von Prowazek, Ricketts, and Schüssler. In this connexion a melancholy interest attaches to the circumstance that the entomologist to the commission was Mr. A. W. Bacot, whose death from typhus on April 12th we recently had with deep regret to report.

Apart from one section devoted to clinical observations, the work deals entirely with laboratory investigations, including the study of lice in connexion with the etiology of typhus, especially as regards *Rickettsia prowazeki*, and the naked-eye and microscopical anatomy of typhus in man and guinea-pigs. In this respect the book before us offers a contrast to the work on typhus fever in Serbia by Dr. Richard Strong and his colleagues (see JOURNAL, June 11th, 1921, p. 857), in which the clinical description formed the predominating feature. The clinical studies recorded in the volume now before us were made at the chief hospital in Warsaw for typhus (St. Stanislaus) on a selected group of 181 patients (86 men and 95 women), consisting of the most typical of the severer cases admitted. The mortality was 13.26 per cent.—a low figure compared with the appalling death rate in recent epidemics in Serbia, Rumania, and Russia. The clinical description is accompanied by photographs of the eruption and of necrosis of the skin, and by numerous temperature charts; the most important clinical observations, including the age, sex, day of disease on admission, symptoms, complications, dates of defervescence and death, are set forth in tabular form at the end of the section. It is noteworthy that among 90 cases in which agglutination tests for *B. typhosus* and *B. paratyphosus* A and B were carried out by the bacteriologist, Mr. Henry Pinkerton, *B. typhosus* was agglutinated in maximum dilutions of from 1 to 200 to 1 to 1,600 in 15 cases, in maximum dilutions of 1 to 25 to 1 to 200 in 27, while 48

[1] *Vitamins and the Choice of Food.* By Violet G. Plimmer and R. H. A. Plimmer, D.Sc., Professor of Chemistry in the University of London. London: Longmans, Green and Co. 1922. (Demy 8vo, pp. xii + 161; 25 illustrations. 7s. 6d. net.)

[2] *Hormone Therapy by Sera, Vaccines, and Drugs.* By D. Montgomerie Paton, L.R.C.P. and S.Edin. London: Baillière, Tindall, and Cox. 1922. (Pp. 163. 7s. 6d.)

[3] *The Etiology and Pathology of Typhus.* Being the main report of the Typhus Research Commission of the League of Red Cross Societies to Poland. By S. Burt Wolbach, John L. Todd, and Francis W. Palfrey. Cambridge, Massachusetts: Published by the League of Red Cross Societies at the Harvard University Press. 1922. (Imp. 8vo. pp. x + 223; 34 plates. 13 figures.)

gave no agglutination. A few of these patients had either had a previous attack of typhoid fever or had been given prophylactic inoculations, but in most cases of positive agglutination with the typhoid bacillus no clinical explanation was found either in the past history or in signs of a double infection, and the writers think it probable that the agglutinations were due to the peculiar propensity of typhus fever to show non-specific agglutination.

The results obtained by Mr. Pinkerton with the Weil-Felix reaction confirmed the claims made by most other workers that the test is a valuable supplement to the clinical diagnosis of typhus, and that it should form part of the routine laboratory work of every hospital receiving typhus patients. Of 83 serums from typhus cases tested only 3 failed to agglutinate *B. proteus* cultures at a dilution of 1 to 100; 56, or 67 per cent., were positive in a dilution of 1 to 800 or over; and 26, or 31 per cent., were still positive at 1 to 1,600. The highest dilution at which agglutination was obtained was 1 to 3,200. In a careful series of experiments during which they became convinced that *Rickettsia prowazeki* is the cause of typhus it was found that a variable percentage only of lice fed upon typhus patients acquire the virus of the disease, although all the lice have equal opportunities for becoming infected. Thus in the 52 feeding experiments performed *Rickettsia* were found in the lice on 27 occasions only. Microorganisms other than *Rickettsia* did not appear in any of the feeding experiments. The writers suggest that the louse in order to become infected must pierce a capillary at the site of a lesion or localization of *Rickettsia* in the endothelium. Owing to a paratyphoid infection all but three of the monkeys sent from London to Warsaw were lost, and the animal experiments were confined to guinea-pigs. A febrile reaction of from three to nine days, discoverable only by the thermometer, was the only evidence of disease in the majority of these animals. Only three deaths occurred; they were preceded by spastic paralysis resembling that seen in rabbits. The naked-eye pathological changes in the experimental typhus of the guinea-pig are slight, but characteristic lesions are found showing the *Rickettsia* on microscopical examination.

The book contains an interesting section on the pathology of typhus in man based on 49 necropsies, only 10 of which were done later than five hours after death, so that the tissues were affected in the least degree by *post-mortem* changes. The histology of the skin was also studied in 28 specimens excised under local anaesthesia during life from cases in all steps of the disease. These studies confirmed the work of previous observers, notably Fraenkel, Jaffé, and Ceelen, who showed that typhus is a disease of the smaller blood vessels, the characteristic lesion or "nodule" being caused by a proliferative reaction of the endothelium and neuroglia to the *Rickettsia prowazeki*, which is localized almost exclusively in the vascular endothelium.

A bibliography of recent work on the etiology and pathology of typhus fever is followed by a large number of beautifully executed microphotographs showing *Rickettsia* in the organs of lice, guinea-pigs, and man, typhus nodules, and other lesions. The work forms a valuable addition to the literature of typhus fever, and will be read with interest by the clinician as well as by the pathologist.

GUY'S HOSPITAL REPORTS.

THE second of the four quarterly parts of vol. lxxi of the *Guy's Hospital Reports*[4] opens with the second and concluding part of Sir Charters Symonds's historical appreciation of Sir Astley Cooper, who, like John Hunter, was not in any hurry to publish his work, and made it a rule never to make any statement not verified by his own observation. This article, which is full of interesting detail, is followed by a symposium on Addison's (pernicious) anaemia, which took place at the Guy's Hospital Research Club on January 12th, 1921; it reports the remarks of nine speakers; in his introductory note Sir William Hale-White recalls the additions to our knowledge of the disease since Addison's description in 1849. Twenty-three years later Biermer published his work and called the disease "pernicious anaemia," but, as Dr. HURST pointed out, "beyond the pernicious name he invented, Biermer added little but confusion to our knowledge of the subject." The condition of the gastric juice is considered in several of the contributions; free hydrochloric acid was absent in all the Guy's cases, and Dr. Hurst believes that the infection responsible for the haemolytic toxin cannot take place unless hydrochloric acid is completely absent from the gastric contents; he emphasizes the importance of giving large quantities of hydrochloric acid during the quiescent periods and in cases of apparent cure for the remainder of the patient's life. Mr. E. W. Bowell's account of the blood has a refreshing air of personal observation and of independence.

The late results of operation in 190 cases of gastric and duodenal ulcer at Guy's between the years 1910 and 1915 are described by Dr. J. J. Conybeare, medical registrar, who finds that out of 150 gastro-jejunostomies 65 per cent. were cured or much improved, whereas only one-sixth of the cases of simple excision of the ulcer were really satisfactory. Dr. A. F. Hurst records two cases of syphilis of the stomach, Mr. W. H. Ogilvie reports spontaneous rupture of the splenic vein in a case of enlarged liver and spleen, Mr. W. M. Mollison writes on the frequency of antral infection in children, and Mr. C. Gill-Carey describes cases of septicaemia in otitis media and its complications. A valuable and specially interesting feature in this instalment is the continuation of Dr. G. W. Nicholson's "Studies on tumour formation," in which he deals with tissue malformations and anomalies of bulk and of differentiation.

AN ANTHOLOGY OF HARDY.

MRS. HENRY HEAD has done a service to several sorts of people in bringing together into a volume entitled *Pages from the Works of Thomas Hardy*[5] an anthology of his writings in prose and verse: First, to the convinced Hardyite, who will applaud her choice or deplore her omissions according to his humour, but will, as the preface suggests, be able to carry this volume with him when forced to leave the well-worn volumes on the shelf and "travel light." Secondly, it will encourage those, more numerous perhaps than Mrs. Head may think, who are frightened by Hardy—by the relentless clearness of his vision. Thirdly, it will send some to read the novels and poems who as yet know them not.

The literary judgement of contemporaries has very often proved mistaken, but it is difficult not to believe those who tell us that future generations will recognize in Hardy one of the great men of English literature. In a few sentences of penetrating analysis Dr. Henry Head in his preface shows reason for the promise of immortality. "Hardy's writings," he says, satisfy the postulate that "what we call Nature is the personification of a series of physical events of which man is an integral part. If he is to survive with any approach to happiness, he must maintain his existence by adapting himself in mind and body to forces that are indifferent to his welfare. . . . To Hardy, fate is not the wrath of a righteous Deity nor the ill-omened consequence of some outraged social custom; it is a sequence of natural events, which are neither malevolent nor well-intentioned, but simply indifferent." "Often," Dr. Head continues, the dice in one of Hardy's stories "seem loaded against the victim. . . . But more careful analysis shows that some human failure in adaptation, due to hereditary or temperamental idiosyncrasy, has contributed to render these indifferent forces effective."

Mrs. Head has classified her extracts under six heads, and, save to those who are thoroughly familiar with Hardy, her anthology will perhaps give a better idea of Hardy's message than desultory reading of his books. It may be hoped that the ultimate effect will be to send many who do not know him well to the books themselves.

SANITATION IN INDIA.

THE fact that a third edition is already required is the best proof that in this book, *Sanitation in India*,[6] Drs. TURNER and GOLDSMITH have supplied a want. The first, published in January, 1914, and reviewed in our columns on May 30th in that year, was exhausted in less than two years; the second, issued in February, 1917, was sold out early in 1921. Dr. Goldsmith, joint author, died in December, 1919. In this

[4] *Guy's Hospital Reports*, vol. lxxi (vol. ii. Fourth Series). No. 2, April, 1922. Edited by Arthur F. Hurst, M.D. Issued quarterly. London: Henry Frowde, and Hodder and Stoughton. (Pp. 112; 22 illustrations. Price: Subscription, 2 guineas post free for volume of four numbers; single numbers, 12s. 6d.)

[5] *Pages from the Works of Thomas Hardy*. Arranged by Ruth Head, with an introduction by Henry Head, M.D., F.R.S. London: Chatto and Windus. 1922. (Cr. 8vo, pp. x + 243. 7s. 6d. net.)

[6] *Sanitation in India*. By J. A. Turner, C.I.E., M.D., D.P.H., and B. K. Goldsmith, M.B., D.P.H.; with contributions by S. C. Hormusji, K. B. Shroff, and L. Godinho. Third edition. Bombay: *The Times of India*. 1922. (Demy 8vo, pp. xiv + 1133; illustrated.) Rs. 15 (£1).)

third edition the sections on water, plague, tuberculosis, leprosy, and influenza have been rewritten, and much fresh material added elsewhere. The book is copiously illustrated, the type and general get-up are good, and there are few misprints. A number of Indian sanitary acts and regulations, useful for reference, are given at full length, and it should be said that untranslated vernacular terms occur frequently.

We note a few errors that might be corrected in any future edition. On page 316 appears what may be called a singular understatement: "In India the great rivers (Ganges, Mahanudi, etc.) are *several miles long*, and the current is so slow that the water takes several *days* to drift from the source to the sea." (Italics are ours.) Surely *hundred* must have been omitted before *miles*, and *days* should be *weeks*. The Indus is 1,802 miles long, the Ganges 1,557, the Mahanudi 502. Dr. R. H. Firth, I.M.S. (p. 432), is Colonel Sir R. H. Firth, late R.A.M.C. The *late* Lieut.-Colonel W. Morris, R.A.M.C. (p. 143), is shown as living in the *Army List*. On page 85 it is said that "ooreed and mungh (pulses) belong to the same class as grass — viz., the bean tribe." While pulses are leguminosae (beans), grasses are gramineae, a natural order far removed from the former. On page 672 it is stated that antitoxin has been proposed as a remedy for tetanus, and that in the future some efficient way of protecting the system (from tetanus) may become available. Surely the extensive and successful use of antitetanus toxin during the recent war deserves fuller and less qualified recognition.

NOTES ON BOOKS.

JUDGED by his latest book, *The Edge of the Jungle*,[7] Mr. WILLIAM BEEBE is to be reckoned a naturalist of the school of Fabre, but, as he truly says, there is no reason why the same man should not employ at one time the latest laboratory methods in entomology—they are in the main anatomical—at another time devote himself to the observation of habits—which may be reckoned a kind of physiology—and at yet another be a systematist. Mr. Beebe in one morning can be all these. As an observer he is both venturesome and patient; he has some astonishing stories to tell, and tells them very well, only occasionally lapsing into a vague brilliancy which may perhaps be the best way to give a picture of tropic life so swift and exuberant that the observer's brain becomes fatigued by the too rapid succession of impressions. Of many of the events he saw and records he admits that he is baffled even to suggest an explanation that commends itself to human reason; but unlike Fabre he remains a good evolutionist, finding comfort in the immensity of the time the physicists are now willing to grant. The book may be heartily commended both to the general reader and to the home-staying naturalist who is not afraid to realize how diverse are the facts that have to be brought into some general scheme.

It is now thirty-eight years since Dr. Mitchell Bruce wrote his small handbook on *Materia Medica and Therapeutics*. Since that time edition after edition has appeared and been reprinted, testifying to the high regard in which this work has been held by practitioners and by generations of medical students. When the eleventh edition was published in 1918, under the joint authorship of Dr. MITCHELL BRUCE and Dr. WALTER DILLING, important changes had been made in the *British Pharmacopoeia* to meet the difficulties due to war restrictions, and those temporary modifications had to be taken into account in revising the manual. In the same way the authors, in preparing the twelfth edition,[8] have now had to take note of the removal of war restrictions. They have not, however, contented themselves with merely recording a return to more normal conditions, but have revised the work thoroughly. Several sections have been recast and much new matter has been included in order to keep pace with the progress of pharmacology and therapeutics. Moreover, new sections have been added on balneology and mineral waters, and on invalid diet. These two additions will, we feel sure, be welcomed by those for whom the book is intended. It is a commonplace that on both subjects the newly qualified practitioner is, as a rule, painfully ignorant; the brief outline here given should do something to guide him, and will at least serve to indicate the importance of these matters in practical therapeutics. In other respects the general plan and scope of the work remain much as before, and we are glad to see that its size has grown little with the passing years.

[7] *The Edge of the Jungle*. By W. Beebe. London: H. F. and G. Witherby. 1922. (Demy 8vo, pp. 237; illustrated. 12s. 6d. net.)

[8] *Materia Medica and Therapeutics*. An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, C.V.O., M.A., LL.D. (Hon.) Aberd., M.D.Lond., F.R.C.P., and Walter J. Dilling, M.B., Ch.B.Aberd. Twelfth edition, revised. London, New York, Toronto, and Melbourne: Cassell and Co., Ltd. 1921. (Fcap. 8vo, pp. 691; 6 figures. 10s. 6d. net.)

It is by no means certain that any good can be gained by writing books against spiritualism. If such books are written, it may be that the best line of attack is through ridicule of the absurdities of the cult. Mr. SUMMERS in his pamphlet *The Fallacies of Spiritualism*[9] takes the matter seriously. There are, however, some good stories in his book, such as that of the "spirit" of Dante and the language he used when he trod upon some tintacks which had been scattered about the floor. After quoting passages from the works of prominent exponents of spiritualism in which descriptions are given of the spirit world where whisky and soda and cigars are procurable, Mr. Summers mentions the amusing fact that in Miss Estelle Stead's heaven most of the spirits are "khaki heroes," though before the war they may have been stonemasons or draper's assistants. Relapsing into seriousness, he suggests that the medium through whom the "khaki heroes" speak is the "victim of tricks of telepathy and hypnotism—two of the most uncontrollable of psychic forces known to men." Then we have the story of the spirit photographed by Professor Charles Richet, who was asked to breathe into a vessel of lime-water, which at once became turbid! After referring to the uselessness of clairvoyance, the dangers of hypnotism, and the dangers of spiritualism, Mr. Summers concludes with a chapter entitled "Where are we?" From this it appears that, in the words of Professor Jastrow, "spirit manifestations are traceable to reactions of the subconscious mind in highly keyed and nervous personalities." The book concludes with a quotation from Professor Huxley: "The only good that I can see in the demonstration of spiritualism is to furnish an additional argument against suicide. Better live a crossing sweeper than die and be made to talk twaddle by a medium hired at a guinea a séance."

The book on gynaecological surgery by R. PROUST and J. CHARRIER[10] is a convenient little volume. It is abundantly illustrated, there are 288 figures, and though the illustrations are, of course, quite small and may not conform to the highest canons of art, they are thoroughly serviceable, and illustrate the verbal descriptions in an adequate manner. To those who read French with facility the little book can be recommended as an admirable compendium of the subject, most suited perhaps to the needs of men revising for a higher examination in gynaecology, but helpful in varying degree to all who are practising the subject. The reviewer has not had the pleasure of seeing this little book before, but he is not surprised to know that this is the fifth edition in eighteen years.

[9] *The Fallacies of Spiritualism*. A Survey of Recent Claims and Pretensions. By A. Leonard Summers. London: A. M. Philpot, Ltd. 1922. (Cr. 8vo, pp. 79. 2s. 6d. net.)

[10] *Chirurgie de l'Appareil Génital de la Femme* de R. Proust et J. Charrier. Paris: Masson et Cie. 1922. (Cr. 8vo, pp. 330; 288 figures. Paper, fr. 10; bound, fr. 12.)

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on May 9th, 25 cases were considered and £374 voted to 22 applicants. The following is a summary of some of the cases relieved:

Daughter, aged 55, of M.R.C.S. who died in 1890. She is a trained nurse and worked for over thirty years, but has had to give up owing to rheumatoid arthritis; her only income is 7s. 6d. a week from insurance and a grant from the National Fund for Nurses. Voted £18 in three instalments.

M.B., C.M.Edin., aged 72, who practised in North London. Owing to overwork during the war his health suffered, and after a serious attack of influenza had general eczema. Applicant has had very little work to do the last two years; three children helped to support him, but owing to trade depression cannot do so now. Voted £30 in twelve instalments.

Widow, aged 52, of L.R.C.P. and S. who died in 1921. Applicant asks for help to enable the youngest daughter to enter a training college. The money received from the practice was invested and brings in £45 per annum. The third daughter is an apprentice and pays her mother 30s. a week for her keep. Rent of the flat amounts to 30s. a week. The Fund has granted £20; this has been paid to the Royal Medical Benevolent Fund Guild, which is supplementing it.

Daughter, aged 59, of a doctor who died in 1870. Three sisters live together in one room, one an invalid. The eldest had to give up housekeeping owing to ill health, and the second earned a little money by nursing. The second sister receives a grant from the Fund of £13 in twelve instalments, and the Fund has granted the applicant £18 in twelve instalments and a special grant of £6.

Daughter, aged 40, of M.R.C.S.Eng. who died in 1906. Applicant has been invalided ever since the death of her father, and is entirely without means. Relieved five times, £31. Granted £26 in twelve instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for secondhand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

THE first bilingual Congress of Radiology and Physiotherapy was held in London, at the house of the Royal Society of Medicine, from June 7th to 10th. It was organized by the Section of Electrotherapeutics of the Royal Society of Medicine and the British Association for the Advancement of Radiology and Physiotherapy with a view to facilitating the interchange of knowledge and experience between British workers in radiological science and their French and Belgian colleagues. The President of the Congress was Sir Humphry Rolleston, K.C.B., and the three Sections, devoted respectively to Radiology, Electrology, and Physiotherapy, were presided over by Mr. Thurstan Holland, Dr. E. P. Cumberbatch, and Dr. J. B. Mennell. The largest Section was that of Radiology, which discussed only two subjects, but had a crowded attendance and much animated debate during the whole of its five sessions. In addition to the ordinary meetings of the Sections, special demonstrations were given in departments of various hospitals, and visits were paid to the Physical Training College and to other centres. An exhibition of *x*-ray and electrical apparatus was held at Surrey House, Marble Arch, in which all the leading British firms in this specialized industry were represented.

Sir HUMPHRY ROLLESTON, in opening the Congress, referred to the death of many British pioneers since the last international gathering of radiologists in London, which was in association with the International Congress of Medicine. He mentioned Silvanus Thompson, Samuel Sloan, James Mackenzie Davidson, William Deane Butcher, Henry Lewis Jones, Cecil Lyster, and William Ironside Bruce, the two last named being victims of their own devotion. He then proceeded to welcome the distinguished foreign visitors, mentioning Professor J. Bergonié of Bordeaux, Drs. Kouindjy and Bourguignon of Paris, Professor Gommaerts of Ghent, and Dr. Gunzberg of Antwerp.

The Normal Stomach.

The whole of the first day in the Section of Radiology was devoted to the discussion of the normal and abnormal stomach as studied by *x* rays. The discussion was opened by Dr. A. E. BARCLAY, who exhibited some ingenious models reconstructing the actual shape of the normal stomach from the shadows seen in the *x*-ray room. The normal stomach, he said, was an extremely elusive thing, or rather the conception of it was extremely difficult to formulate. The stomach might vary within very wide limits, and yet be perfectly normal. It was not a cast-iron retort, but one of the most flexible and sensitive muscles in the body. A normal stomach could alter its shape and size without becoming an abnormal organ. The tonic action which played so important a part in varying the appearance was, from the radiological point of view, an entirely automatic contraction of the muscle which compensated for and counteracted the effect of gravity on the stomach contents. He referred in particular to the action of the fibres of the inner oblique coat of the stomach, which were a continuation of the circular fibres of the oesophagus, spreading out in fan shape and intermingling with and disappearing in the circular and longitudinal fibres in the lower half of the stomach. There was now sufficient evidence to suggest strongly that the function and control of these powerful oblique bands were independent of the control of the other coats, and he believed these fibres to be the cause of a certain picture of the normal stomach which had puzzled him for years, and to which he gave the name of "cup and spill," the food collecting in the upper part of the stomach in a "cup" and spilling over into the lower part.

This type of stomach was referred to by other speakers, and Mr. G. JEFFERSON exhibited some beautiful illustrations of the layers of stomach muscle—circular, horizontal, and oblique—bearing out what Dr. Barclay had said. Dr. DOUGLAS WEBSTER preferred to call it the "cascade" stomach, and said that it appeared from literature that both the "hour-glass" and the "cascade" had intermittent as well as persistent forms, and that the condition might be due either to an ulcer or to a nervous or remote cause. Mr. A. M. CONNELL mentioned a case which seemed to suggest that the "cup and spill" stomach might be caused by traction on the oesophagus, with which the oblique fibres were continuous. Dr. PEREMANS of Antwerp pointed out that the stomach, when barium-filled, differed in many respects from the normal stomach of the textbooks, and that it was possible that the radiological stomach was itself to some extent artificial. The problem was summed up by Dr. GILBERT SCOTT, who declared that it was as difficult to describe the normal stomach as to describe the normal face. The stomach had certain characteristic expressions—he instanced the "hungry" stomach, the "slack" stomach, and the "exhausted" stomach. The emptying rate was of no diagnostic value whatever, for the "hungry" stomach might empty in an hour.

Methods of Stomach Examination.

Two schools of practice made themselves heard in the discussion on the best methods of examination of the stomach, the one suggesting that the screen view alone was of value, and the other that the screen was of less importance than the plate. Sir ARCHIBALD REID considered that the ideal examination would consist in exhaustive screen work supplemented by radiographs when necessary to verify the points which the radiologist had already elicited. He admitted that plate work was not so meticulously accurate as work with the screen, but the statistics of a large number of cases, not specially selected, showed that it was reasonably efficacious, and it had the advantage of exposing the radiologist to less danger. Dr. GILBERT SCOTT advocated palpation under the screen, a method which he had found to yield the most consistently correct results in diagnosis. It was true that the plate would show a gross lesion or an ulcer of fair size, but the test of any technique was the detection of the very small gastric ulcers, and these, if they happened to be on the anterior or posterior surface of the stomach, were missed by the plate. The precautions to be observed were that the screen must be at least 30 in. from the tube, that the minimum current must be used (ordinarily not more than 1 or 2 milliampères), and that the examination must be carried through as quickly as possible. A quick examination, taking not more than five minutes, was possible if it was undertaken systematically, inch by inch. Formerly he was in the habit of paying attention to the clinical history of the patients, but now he found it better to start without any information so as to avoid bias. Too much reliance was apt to be placed on the emptying of the stomach; in the normal stomach it was possible to find a difference of four hours in the emptying rate as the result of a variation of diet alone.

Dr. G. E. VILVANDRE agreed as to the value of palpation, but said that it had to be carried out in a very limited field. It was of no use to place the hand over the smaller curvature and declare that there was no ulcer. If careful palpation were carried out all around the curvature, a point would be found at which the patient had definite pain. Mr. J. M. REDDING did not allow himself to be influenced by what he saw on the screen unless it was substantiated by radiograms. He believed that the very smallest lesion, given a certain amount of good fortune, could be demonstrated on the plate. The statement that any one area of the stomach or duodenum presented localized tenderness was fallacious in the great majority of cases. The complete insensibility of the stomach was sufficiently apparent in operations on the abdominal wall under local anaesthesia. Such painful sensations as occurred in the stomach were, he agreed with Dr. Hurst, the result of increased tension of the muscular coat. If true visceral pain did occur as the result of pressure, it was obvious that it would be produced by such pressure as would bring about the natural increase of tension—that is to say, pressure by the flat of both hands over the whole surface of the viscus, and not pressure applied to one small area. Only in exceptional cases was it justifiable to associate the epigastric tenderness with any particular area of the underlying organ.

Dr. A. E. BARCLAY advocated palpation, which, however, must be carefully done, and the palpating hand should be behind the shadow of the diaphragm. The serial plate method, however, was preferable to the screen in the examination of the last few inches of the lesser curvature. He drew attention to one disability among *x*-ray workers who undertook long screen examinations—namely, diarrhoea—but by the use of an apron, back as well as front, he had found this trouble disappear entirely.

Dr. LEONARD ROWDEN said that the ulcers of the stomach which were most likely to be missed were those near the cardiac end, and he found a better view of the cardiac end obtainable by having the patient in the horizontal position when the meal was given. He always gave a full meal, and preferred to make his palpation towards the end of the emptying rather than at its beginning. He had given up the double meal method, finding the single meal serve his

purpose. By watching the peristaltic waves, viewed from the back of the patient who was lying prone, he had been able sometimes to detect a break in the peristalsis which was significant of malignant disease of the stomach.

Dr. E. I. SPRIGGS said that whether or not pain on palpation was indicative of ulcer, the converse was certainly not true; he knew from cases within his experience that absence of pain on palpation did not exclude ulcer. The most effective protection to the radiologist was to spend some hours each day in the open air. Dr. C. W. SABERTON referred to abnormalities of the stomach due to reflex irritation. Frequently the appendix caused a spasmodic condition of the duodenum or an incisura on the greater curvature, where there was no evidence of any organic disease in the way of an ulcer crater. The detection of duodenal ulcers was as difficult as it had always been, and he was never sure of such an ulcer from direct evidence. Dr. G. B. BATTEN drew attention to the distortion which was possible if radiography was carried out with the patient lying on his back. Dr. MAURICE HAYES said that for fifteen years he had devoted himself to *x*-ray work, including a great deal of palpation, and had escaped all injury. He did the gross palpation with the gloved hand, and the detailed palpation without any rays at all, following this up, where necessary, by palpation with the naked hand under the screen.

Mr. THURSTAN HOLLAND from the chair summed up the discussion, and urged the necessity in all doubtful cases of studying the meal right through the whole intestine, and of keeping in mind the possibility of some reflex cause for the doubtful symptoms.

Deep-seated Radiotherapy.

Three sessions of the Section, covering two days, were occupied with a discussion on deep therapy with *x* rays and radium. The German systems, particularly the Erlangen technique, found critics and supporters. Dr. CASEMAN of Antwerp, who opened, gave a description of the Dessauer system of deep-seated therapy which he followed.

Dr. ROBERT KNOX gave an account of the technique devised by the Electrotherapeutic Department at the Cancer Hospital, the outcome of which had been the construction at first of two rotating tubes whose beams converged at a point beneath the skin, and later the construction of a rotating table with fixed tubes, the idea being by one or other kind of movement to get the penetrating radiations over the entire area concerned. Dr. GILBERT SCOTT thought that radiologists should take a broader view of cancer. It was not sufficient to treat the primary growth. The larger the area irradiated the better, not only because this procedure would influence any isolated cells, but also because the amount of scattered radiation would be increased.

Dr. VILVANDRE described a visit to the Freiburg clinic, where, he said, the work was very thorough and scientific, and the microscope was brought in to assist diagnosis. He did not think that British radiologists could do better than follow the German example in the matter of deep therapy, and he begged radiologists not to be diverted from the path of pure science by national pride or prejudice. Professor SIDNEY RUSS discussed the subject from the physical point of view, and stated the problem as being one which consisted of three variables—namely, the radiation itself, the sensibility of the tumour, and the body resistance.

Dr. N. S. FINZI urged the need for high voltages in treatment. Intensive radiotherapy in future would not be a question of 200 or 300 kilovolts, but of 1,000 kilovolts. When it was possible to get radiations of that order radiotherapy would become much simpler and more accurate, as well as more efficacious. Two main methods were at present being followed in Germany. One of these was the Erlangen technique, which consisted of the use of a fairly large number of small fields, and the other was the Dessauer method, in which very large fields were used. The small field method demanded very great personal accuracy, but the other method had the disadvantage that so very large a total area of tissue was exposed to the maximum radiations. In Dr. Finzi's opinion surgery would become more and more associated with *x*-ray treatment in the case of carcinomas, but the *x*-ray applications would come first, and the surgeon's knife afterwards, an interval of perhaps several weeks separating the two procedures, and then, if the surgeon found no cancer cells, he was not entitled to say that there had never been any! The discussion was continued by a number of other speakers, one or two of whom reserved their more considered remarks for the discussion on the same subject which is to take place in the appropriate Section at the Glasgow meeting.

Radium.

A number of interesting communications were made on the special subject of radium applications in deep-seated cancers. Mr. SAMPSON HANDLEY made some suggestions with regard to the disposition of buried radium tubes, which he thought should be placed in a ring just outside—not inside—the visible focus, thereby giving a lethal dose to the microscopic growing edge of infection, which, after all, was the important thing in the development of the growth. Beyond the remotest visible nodule of the disease there was a growing edge, permeating the lymphatics: and he believed that radiologists generally had concentrated too much attention upon the visible manifestations of the disease and not sufficient upon the microscopical extensions. It was perhaps also insufficiently recognized that in such cases as breast cancer the plane of spread of the disease was in the deep fascia and not in the skin, although it was in the skin that the nodules were seen. This meant that the lethal dose of radiation must be conveyed, not to the skin, but to the fascia at a depth beneath the skin which might, in the case of a stout person, amount to more than an inch. In malignant disease of the mediastinum Mr. Handley thought the future would show that extensive surgical procedures might be necessary and advisable in order to get the radium tubes into the best possible positions within the thorax.

Mr. HAYWARD PINCH, of the Radium Institute, defined deep radium therapy as a therapeutic procedure with radium, either in the form of salts or emanations, used with a screen of not less than 1 mm. of thickness of silver or its equivalent in some other heavy metal. Deep radium therapy could be carried out by the external application of a heavily screened surface applicator, or the insertion of buried radium salt or emanation tubes into the growth, or by a combination of these two methods. The use of surface applicators was not ideal, because with these not more than 50 per cent. of the gamma radiation was made available, but there were certain situations in which external application was either obligatory, as in subcortical lesions, or in which it was advisable, as in malignant disease of the thyroid. He believed that as time went on surgical procedure would oftener be called into play to assist radium treatment. In a growth not exceeding 3 cm. in diameter the best results were obtained from burying one tube of radium of suitable size and shape. If the growth was much larger or flatter several tubes might be scattered throughout its extent at a distance of about 3 cm. apart. The two methods were combined by the use of buried tubes in the primary focus and an irradiation of the efferent vessels and lymphatics with the surface applicators. He looked forward to the use of larger quantities of radium—grams instead of milligrams—and it was hoped that the Radium Institute would shortly be able to open a small nursing home in which cases could be irradiated with one or two or even up to five grams of radium bromide. Judging from animal experiments it was important that patients undergoing deep radium therapy should have a plentiful supply of vitamin B in the diet. The combination of radium with *x* rays would probably give better results than either agent alone. The sequelae of radium treatment included a passing nausea, which sometimes went on to vomiting, and also certain disturbances due to auto-intoxication, with a slight rise of temperature and a feeling of general malaise. Radiated tissues presented diminished resistance to bacterial infection, and there was such a thing as radium exhaustion, in which tissues long irradiated failed to respond to radium any further. At Erlangen the artificial menopause was produced in one sitting by suppression of the ovarian secretion, but there was evidence that chlorosis vulvae was conditioned by loss of the ovarian secretion, and it seemed possible that this might arise in cases so violently dealt with.

Professor W. S. LAZARUS-BARLOW agreed that the closer the two agents, *x* rays and radium, were kept together in treatment, not necessarily in the same hands, the better for the patient. At Middlesex Hospital a certain amount of work had been done with a large quantity of nearly five grams of radium bromide. But perhaps there was too much inclination to assume that if good results were obtained with a small quantity of radium, much better results would be obtained if a larger quantity were available. It was true that more radium was required, but not necessarily for the treatment of the individual case. He went on to refer to a number of

cases at various hospitals in which cancer of the tongue and mouth—definite squamous-celled carcinoma—had yielded to radium treatment, so that, at any rate at present, there was no trace of the former condition. Most of these cases were treated by the introduction of very small quantities into a number of foci, the radium emanation being allowed to remain there until it decayed practically to nothing. Of the fact that cancer cells were specially radium-sensitive there could be no doubt, but he would go farther and say that if a really satisfactory treatment of malignant disease was to be established it must be because the body of the individual in which the cancer existed was able to produce some anti-substance to the cancer cells. That was really the only rational basis for hope in the treatment of malignant disease. The discussion concluded with the exhibition of some remarkable photomicrographs of cancer cells and their changes, shown by Professor DAELS of Ghent, who also described his method of burying radium deeply in the tissues.

The Re-education of Muscles.

At a joint meeting of the Sections of Electrology and Physiotherapy a discussion took place on the re-education of muscles. It was opened by Dr. P. KOUINDJY, formerly chief of staff in charge of re-education at Salpêtrière, who gave a description of the exercises which he had adopted. These included a whole series of simple movements the object of which was to teach the patient to remain first on one leg and then to keep the standing position while the upper limbs performed different educative gymnastic movements. Once the standing position was acquired and the balance of the trunk in this position obtained, one proceeded to the re-education of walking, which included four cycles: (1) stability, (2) regulation of step, (3) balance during the walk, (4) the re-educated walk. He insisted that the exercises in these four cycles should be carried out in their proper order, so that each series followed the one preceding it, and became, so to speak, a corollary of the movements already performed. Nothing was more dangerous than to break the sequence of the exercises. A few simple pieces of apparatus, such as a marked carpet, the horizontal ladder, and the inclined plane, served the purpose of carrying on with greater assurance the re-education of walking. He dealt in a similar way with the re-education of the upper limb, and described certain workshops which he had organized for the wounded in which functional re-education by means of work has proved of great benefit.

Scoliosis.

In the discussion on scoliosis Mr. R. C. ELMSLIE read a paper in which he insisted on the importance of the education of the child as a factor in securing correctness of position. The child must be instructed in the sense of correctness and taught from the first how to use his muscles. Dr. TIMBERG also touched upon the importance of home exercises as distinct from those given in the gymnasium—meaning correctness of attitude while sitting in a chair at table, and so forth. Mr. MCCRAE AITKEN referred to the usefulness of keeping on a plaster jacket during sleep, even after it had been abandoned during waking hours, so that the child in slumber was prevented from twisting into an unnatural position. He had used very extensively Abbott's method, but these were useless unless the child was taught from the beginning how to use his muscles. Other speakers in the discussion were Dr. DE MUNTER of Liége and Professor GOMMAERTS of Ghent.

Backache and Referred Pain.

The Section of Physiotherapy held an interesting discussion on backache and referred pain, in which papers were read by Drs. SOSNOWSKA and WETTERWALD of Paris, Dr. GUNZBERG of Antwerp, and others. Mr. EARDLEY HOLLAND, who was invited to speak on the subject from the gynaecological point of view, said that backache was often considered to be a symptom of pelvic disorder, but it was obvious that many cases which came to the gynaecologist complaining of backache had absolutely nothing wrong with the pelvic organs. The commonest variety of backache was due to sacro-iliac strain during pregnancy. During at least the last four months of pregnancy a faulty attitude was adopted. Furthermore, the sacro-iliac joints, which were said to be loosened, underwent a violent form of exercise during labour. The patient, therefore, ended with sacro-iliac strain. His practice was to treat this strain by means of a very firm belt around the iliac crest, and as the patients commonly had visceroptosis the wearing of corsets was enjoined. Some of his colleagues also advised high heels, but heels appeared to be high enough already! Dr. J. B. MENNELL said that there was a point two inches away from the umbilicus, on the line between the umbilicus and the antero-superior spine, where deep pressure would reveal sacro-iliac strain if it existed. He believed that thousands of appendices had been removed when the real trouble was not appendicitis but sacro-iliac strain. He himself had seen a number of patients from whom the appendix had been removed because of pain in the right iliac fossa, and the pain, which was unchecked by the operation, was relieved by adequate pelvic support.

High-frequency Currents.

In opening the discussion in the Section of Electrology on the physiological action of high-frequency currents, Dr. CUMBERBATCH expressed the view that high-frequency currents had some other influence on the body besides the production of heat, although, until the problem was further elucidated, he was going to continue to act on the assumption that the effects were those of heat alone. He gave an account of a number of cases successfully treated by diathermy, both by local application for surface lesions and general application in cases of high blood pressure, where, he believed, diathermy acted by reducing the viscosity of the blood. Many cases of gonococcal arthritis, at a stage not too advanced had yielded to this method of treatment. This subject and some of the other matters discussed in this section, as also in the Section of Radiology, are on the programme of the similar Section at Glasgow.

CLOSE OF THE CONGRESS.

Sir HUMPHRY ROLLESTON, in closing the Congress, expressed the great gratitude which workers in general medicine felt for the efforts electrologists and radiologists were making to add to the volume of knowledge. It had been a great pleasure to meet a number of French and Belgian workers in this field, and he hoped that there would be a renewal of this pleasant and useful association another year.

FEDERATION OF MEDICAL AND ALLIED SERVICES.

THE annual dinner of the Federation of Medical and Allied Services was held on June 7th. Sir BERKELEY MOYNIHAN, Bt., the President, who was in the chair, said that it was the privilege of the Federation—a privilege it had created for itself—to give such assistance and counsel as it could to the Ministry of Health; but it could not properly discharge this task until two conditions were fulfilled—namely, unity in the profession, and a right relationship between the Federation and other bodies. At the present moment a wise tolerance was not everywhere displayed within the profession; views tenaciously held were not always expressed without bitterness, nor was every opportunity taken by generous utterance to bring together professional brethren who, though working on different lines, were pursuing the same end. It was natural that there should be deep and acute differences of opinion, for the everyday work of every medical man was a conflict. He was ceaselessly at war with an implacable and ruthless foe, and he knew that when the enemy was overcome it was not because a syndicate had been at work nor because a committee had been sitting, but because he (the medical man) had put all that he had into the struggle. It was for this reason that medical men became individualists, and individualists were always apt to have prejudices. Prejudice was but the emotional reaction of ignorance to truth, and the sooner prejudices were got rid of the better. Forbearance and generosity were called for in the common language they used of one another. He remembered going into the church of St. George the Greater at Florence and seeing in a side chapel the tomb of Salvino degli Armati, the inventor of spectacles, with the inscription, "May God forgive him his sins!" While the work of the medical man was individual (Sir Berkeley Moynihan continued), it had a very obvious national significance. When, towards the end of last year, he heard that one of the original founders of the Federation had been summoned to the bleak and rugged North to take care of the health of the Prime Minister, he became anxious as to the effect of the Prime Minister's malady upon the Irish question, then in a critical

stage. When Louis XIV was urged by Madame de Maintenon and the clericals to put his signature to the revocation of the Edict of Nantes he stubbornly refused at first, and only gave in at the last extremity when he was driven mad by a carious molar. Perhaps Sir Squire Sprigge might add to the gaiety of the profession by writing another of his fascinating books, describing the influence of medicine upon politics. In conclusion, he hoped that the profession would by degrees develop a corporate sense of common ideals and common duties and responsibilities. He himself was always accused by his best friends of having ideals; but ideals were very good things to have lying about. Perhaps nobody ever attained his ideal; certainly the best of them never did, because they set their ideals so high. Ideals were not for attainment, but for pursuit.

The Right Hon. ROBERT MUNRO, Secretary for Scotland, who in the absence of Sir Alfred Mond responded to the toast of the Ministry of Health, said that the Ministry and the Scottish Board of Health were quite an harmonious coalition. Though they had many differences of opinion they were solved by peaceful persuasion on both sides.

Colonel NATHAN RAW, M.P., in proposing the toast of "The Federation," said that it had three objects: to discuss with all those interested in health questions the formation of a public opinion upon which action might be taken; to protect the community against ill-advised legislation; and to secure adequate representation in Parliament of those interested in health problems. The Federation now embodied three separate councils: a medical council, a council of the allied professions, and a citizens' council, the last named being presided over by Lord Islington, whose name he coupled with the toast.

Lord ISLINGTON said that the Federation now included thirty-four societies, whose total membership ran to 100,000 individuals. The citizens' council was the latest development, and represented the lay organizations. Health was a technical matter, in respect to which the community was largely unorganized, ill informed, and even misinformed. It was an imperative necessity to educate public opinion, and he hoped that the Federation would take full advantage of the medium of the press.

Sir THOMAS HORDER proposed the health of the President and Sir Malcolm Morris, congratulating the former upon his baronetcy and the latter upon his approaching golden wedding. Both said a few words in reply.

A HALF-CENTURY OF PUBLIC HEALTH IN NORTH AMERICA.

BY

JOHN C. McVAIL, M.D., LL.D.

(*Concluded from page 895.*)

V.

HOUSING AND VENTILATION.

A BRIEF article on housing as a factor in health progress in the past fifty years, by Mr. Lawrence Veiller, secretary to the National Housing Association, states that whereas the slum was formerly confined to cities, especially to New York, it is now to be found everywhere, even in villages and on the prairies. The first housing Act in the States was the New York Tenement House Law of 1867.

Fifty years ago it was the practice to build working-class houses with "interior rooms" without either light or air supply excepting such as might be obtained from an adjoining room. Then came a requirement for airshafts, which as it turned out made things rather worse, for they were closed at the bottom and without means of ventilation. They were rendered illegal, and ventilation of rooms into spaces or courts made compulsory. Privy vaults, with their plagues of flies, are being displaced by water-closets, garbage is being collected, and surface and slop drainage controls the breeding of mosquitos. Overcrowding of rooms is still common, and overcrowding on site has tended to increase with the growth of cities. Central water supply has displaced shallow wells and yard pumps. The health officer is making inspections instead of waiting for complaints, and a higher standard of personal and general cleanliness is being observed.

The article, however, gives no information as to the progress being made in the providing of additional houses, nor does it say whether the municipality or the State is undertaking the task of such provision. The explanation of Mr. Veiller's silence on the matter may probably be that America is still endeavouring to rely on private enterprise and business emulation. If so, the question occurs whether builders are receiving any kind of assurance that if they do their duty alike in plans and workmanship and reasonableness of charges, neither the State nor the municipality will rise up in competition against them. America is suffering, like this country, from a remarkable shortage in dwelling-house accommodation, and an exposition of the State or Federal policy that is being adopted in meeting the situation would be of real interest at the present time.

From the statements contained in the article on ventilation by Dr. George T. Palmer, epidemiologist, Detroit Department of Health, it is clear that American conditions differ from those in this country in two essential respects: first, the range of atmospheric temperature is much greater in America, and secondly, that in this country we still rely largely on the open fire for ventilation as well as for heating.

During the last fifty years the very word "ventilation" has changed its meaning. Formerly it covered just the provision of pure air. Now it "is the adjustment of the indoor air environment to meet the requirements of comfort, health, and efficiency." Thus defined it pays much more attention to temperature than to any other factor, and next to temperature comes humidity, though on that question there seems much more difference of opinion. The old CO_2 standard is soundly trounced by Dr. Palmer, and it was no doubt unfortunate that the establishment of CO_2 as a convenient measure of impurity had the effect on the public, and even to some degree on the professional, mind of maintaining the erroneous view that a small increase in the very minute quantity—four parts in 10,000—of that gas naturally existing in the air is in itself a menace to health. When the carbonic acid bogy began to lose its terrors, the theory of organic effluvia for a time took its place. Temperature was receiving attention by 1895, when Billings, Mitchell, and Bergey wrote that—

> "The discomfort produced by crowded, ill-ventilated rooms in persons not accustomed to them is not due to excess of carbonic acid, nor to bacteria, nor in most cases to dust of any kind. The two great causes of such discomfort, though not the only ones, are excessive temperatures and unpleasant odours. Such rooms as those referred to are generally overheated, the bodies of the occupants, and, at night, the usual means of illumination contributing to this result."

Concerning standards of air supply, Dr. Palmer recalls how the principle of 30 cubic feet per person per minute came to be accepted as an approach to De Chaumont's 50 feet, based on his observations that the CO_2 measure of four parts in 10,000 could not be exceeded by more than two parts without accompanying conditions indicative of detriment to health. The experimental work of Flüge, Paul, Leonard Hill, and others in establishing modern principles is noted. The principles on which ventilation practice in America is based are set out. The use of ducts for temperature adjustment, humidification, changes in heating practice, re-circulation, the newer ventilation standards, deficiencies in existing laws and codes, and present-day ventilating needs, are discussed in a fashion which incidentally demonstrates the author's practical experience of the problems. He evidently appreciates the value of cross-ventilation by means of opening windows, on which so much reliance is placed in this country, especially for hospitals, and even for schools, though the difficulty in schools is much greater owing to the small cubic space practicable per child. But, as already mentioned, the conditions in America are so different from those in this country that the same methods are not generally applicable, though fundamental principles cannot but be identical.

INDUSTRIAL HYGIENE.

In an article on industrial hygiene by Dr. George M. Kober of New York the history of the subject is carried very far back, and the abuses that arose, especially in textile industries early in the last century, are described. In 1906, Congress of the United States established a National Committee on Child Labour, which resulted in a great deal of Federal and State legislation. Massachusetts, as seems to have been usual, had taken the lead, but it was not until 1877 that inspectors were given the right to enter factories. The first step in many States was to require the provision of fire escapes, and eventually the provision of sanitary conveniences. Seats for female workers, guards for dangerous machinery, ventilation, meal hours, prohibition of employment of women

within two or four weeks after childbirth, medical attendance for lead poisoning, hospitals for miners, and a variety of other matters came to be included in many State laws, but still without uniformity of either purpose or requirement.

Workmen's compensation has been subject to similar divergencies, but since 1914 progress has been rapid, so that laws have been enacted by forty-five States and three territories. The New York State law of 1920 covers 23 diseases, and the Ohio law of 1921 15 diseases, as against 30 in the British Acts.

A bureau of statistics of labour was created in Massachusetts so long ago as 1869, and the Federal Government followed in 1885. It has issued many valuable publications. A bureau of mines was formed in 1909-10, and whereas in 1907 6.19 per 1,000 day workers were killed by accidents, in 1918 the rate was reduced to 3.94. A children's bureau was created in 1911-12, and was placed under the Department of Labour in 1913.

The U.S. Public Health Service organized a division of industrial hygiene and sanitation in 1915, with a research laboratory. The Health Service programme includes surveys of industrial health hazards and their prevention, reports on disease prevalence and sanitary conditions, medical supervision of employees, standards of industrial hygiene, sanitation of industrial communities, co-operation with health authorities, and supervision of industrial establishments owned by the Federal Government.

Courses in Industrial Medicine.—Dr. Kober states that all medical schools which have courses in hygiene and public health also have eight to ten lectures on industrial hygiene and the more dangerous occupations. There are both undergraduate and graduate courses. Harvard in 1918 was the first institution in the world to establish a course of instruction and research leading to degrees in industrial hygiene. The courses include applied physiology of industry, air analysis, industrial toxicology, vital statistics, industrial sanitation, preventive medicine and hygiene, industrial health administration, employment management, workmen's compensation and the legal aspects of industrial disease, nutrition, industrial surgery, orthopaedic surgery, and industrial medicine. These subjects also are the first year's work for the degree of doctor of public health in industrial hygiene, a second year being devoted to an investigation upon some phase of industrial health. Hospital attendance on occupational disease is also required. A school of hygiene and public health was opened at Johns Hopkins University in 1918. The University of Pennsylvania has since 1906 laid emphasis on industrial hygiene in courses for its degree of doctor of public health. Yale began courses in 1917. Occupational disease clinics were first begun at Cornell University in 1910, and are now held at various hospitals. Work goes on also in industrial surgery and the physical reconstruction of disabled workers.

Economic Loss.—This problem of loss in industry due to lowered health conditions has been made a subject of special study by Dr. E. L. Fisk. It was calculated by a U.S. commission in 1913–15 that 30 million wage-earners lost about nine days annually through sickness. A large life insurance company found that the loss was 5.8 days for males and 6.9 for females. Dr. Fisk has gone into the question of the cost of periodic medical examination of the entire population, and estimates that it would amount to 525 million dollars. If about ten millions of the persons examined required treatment at 100 dollars a case, this repair work would cost 1,000 million dollars, or, say, roughly £200,000,000. He makes estimates of the losses from several theoretically preventable groups of diseases—tuberculosis, influenza, venereal infection, and eyestrain. The economic loss from fatal and non-fatal accidents is estimated by the Department of Labour at over 31 million dollars. All these are enormous figures, and we quote them without comment, but Dr. Kober expresses his cordial agreement with Dr. Fisk on the subject of periodic medical examination—a proposal which was brought before our own Royal Commission on the Poor Laws, but was adversely criticized in its report as being calculated to produce a nation of hypochondriacs.

Dr. Kober concludes his exhaustive and informative paper by advocating the promotion of physical education at school, and advanced military training between the ages of 18 and 20.

"When we supply our children with healthful schoolrooms and teach them the value of periodic medical inspection, of pure air, sanitary homes, proper and sufficient food, physical culture, baths, and suitable clothing, and the importance of pure, clean lives, the lessons taught will be applied in the homes and workshops of the nation, and a very important advance in the conservation of life and efficiency in the industries will be the consequence."

The reviewer heartily agrees.

PUBLIC HEALTH NURSING.

In a sketch of the history of public health nursing, Mrs. Lavinia L. Dock, secretary to the International Council of Nurses, after references to Florence Nightingale and to the organization of district nursing in England, especially by the establishment of Queen Victoria's Jubilee Institute, goes on to describe the growth of public health nursing in the United States from 1877 onwards. It was quickly perceived that "the services of nurse and physician must be as easily obtainable by the poor as by the rich, and there must be no exclusion." In the antituberculosis movement the value of the nurse as a teacher of hygiene and sanitation was early recognized. The school nursing movement started in 1902 and spread rapidly. Employers of labour had begun to engage nurses in 1895, and in 1909 an industrial life insurance company set on foot for its policy-holders a nursing scheme which has grown to vast dimensions. In 1910 a course of training for public health nursing was established at Columbia University, and "such training is now (1920–21) given in the form of post-graduate courses, of which there are 22 offered by universities in various parts of the country." At present the Rockefeller Foundation is financing an inquiry into the whole system of nursing education.

Specialism in nursing raises troublesome problems in America, as in this country, but it is recognized as, within limits, unavoidable. Controversy exists as to whether private or public control of nursing is the better; by some it is held that dual responsibility should exist, as municipal authorities are not so likely to enter on new experiments as private bodies. The rapid extension of State direction and control is, however, the most significant factor in the development of public health nursing; this is attributed largely to the influence of the war, and the American Red Cross has done much temporary financial and administrative work, which has prepared the way for the State taking full charge. The Public Health Nursing Service increased from 130 twenty years ago to 11,000 at the beginning of 1920. The national organization for public health nursing has a considerable staff, publishes a monthly magazine, and circulates much special literature. It has standing committees for public health nursing, education, organization, legislation, records, and reports. Sections have been created for tuberculosis, child hygiene, school and industrial nursing.

Certain fundamental principles of work tested by experience are now universally accepted. One is that the nurse should not work under a charitable organization, otherwise her services are limited to those below the poverty line. Another is that she should not dispense material relief, as "patients learn to look for and value such assistance rather than her own gifts of nursing, skill, and wise advice." A similar observation is sometimes made in this country with regard to gifts of milk at child clinics; the mothers come for the milk but disregard the treatment and advice. Miss Gardner is quoted as maintaining that "the work should be on as sound a financial basis as possible. All who can afford to make payment for services should do so. This usually is arranged on a sliding scale, the maximum being the cost price of the visit; and the minimum the amount possible for the poorest patients, a range usually covering from five cents to fifty or sixty." Many associations, it is stated, now offer an hourly service at full cost or more (seventy-five cents or a dollar). Another principle is that records, including various specified details, must be kept, and another that there must be no interference with religious belief; it has been found that public health work should not be carried on by a church. Co-operation is the keystone of good work, and on professional relationships with the physician Miss Gardner is quoted as saying, "The public health nurse should not diagnose, should not prescribe, should not recommend a particular doctor or a change of doctor, should not suggest a hospital to a patient without the concurrence of the doctor, and should never criticize by word or unspoken action any member of the medical profession." But regarding this Dr. Ethel C. Burnham says, "These rules appear to me too severe, and I believe that in time they may be modified, so that a nurse will not be compelled to serve under a physician who is palpably ignorant or dangerously careless."

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SATURDAY, JUNE 17TH, 1922.

THE WELSH NATIONAL MEDICAL SCHOOL.

THE South Wales newspapers announce that the Welsh School of Medicine at Cardiff is confronted by a rather serious difficulty. The University of London and the Conjoint Board of the Royal Colleges in England, acting independently but simultaneously, have notified the authorities of the School that they are unable to recognize the King Edward VII Hospital in Cardiff as providing the facilities prescribed in the case of the hospital of a medical school. This is tantamount to refusing to recognize the Welsh National Medical School as at present organized. The Faculty of Medicine of the University of Wales, it is stated, fully appreciates that so long as the recognition applied for is withheld the status of the Welsh School of Medicine must be adversely affected, the enrolment of students for the final studies much diminished, and grave hardship inflicted on those students who have already entered upon the fourth year's courses at the Welsh school.

The report presented to the Senate of the University of London as the result of an inspection of the arrangements at the hospital is to the effect that the facilities at Cardiff for teaching practical or clinical medicine are not adequate; the professor of medicine is at present the sole teacher of that subject recognized by the University of Wales; the other members of the staff in medicine are not "recognized" teachers of the University and have no duties in relation to the teaching of the students. Moreover, the professor has at his disposal so small a number of beds that they cannot, it is said, be adjudged satisfactory provision even for a limited number of students. There are no arrangements at present for special instruction either in diseases of children or in dermatology, and definite teaching appointments have not been made in the special departments of ophthalmology, oto-rhino-laryngology, and anaesthetics. With regard to surgery, it would appear from the report that the authorities have not made definite arrangements with the surgeons for the establishment of surgical dresserships to be held by students when the number of students is such as to render the dresserships under the whole-time professor insufficient. From an interview with the dean of the medical school published in the *South Wales Daily News* we gather it to be admitted that the number of beds for medicine is too small, although it was thought that it would be enough to enable the school to start. Professor Hepburn stated also that appointments in ophthalmology, oto-rhino-laryngology, and anaesthetics had actually been made, and that it is intended to appoint Dr. Alfred Howell, assistant physician to King Edward VII Hospital, Cardiff, and physician to the clinic for diseases of children at the City Lodge, to be lecturer on diseases of children, and to give clinical instruction at the City Lodge. The position has been discussed at joint meetings of the Board of the Welsh National Medical School, and of representatives of the University College of South Wales and Monmouthshire and the governors of King Edward VII Hospital. It is reported that as an outcome of these deliberations various recommendations have been made, including one to the effect that the honorary physicians of the hospital shall be recognized as university teachers. The adoption of this recommendation will, it is stated, provide forty additional beds for instruction in medicine.

We have no doubt that the difficulty will be overcome, and probably the action of the University of London and the Conjoint Board of the Royal Colleges, though it has caused a good deal of surprise in Wales, will eventually prove to be a blessing in disguise. We suspect that the root of the trouble is that the population which a university hospital in Cardiff should serve has outgrown the capacity of the King Edward VII Hospital. It is an attractive building externally, but it is in the centre of the city on a site which cannot be materially enlarged, and that site is overcrowded. It is not for us, of course, to suggest what should be done, but we strongly suspect that the wisest course would be to reconsider the whole hospital situation in Cardiff, and perhaps find, somewhere in the outskirts of the city, a convenient site on which the additional accommodation now required could be provided, the present building being reserved for emergency cases.

THE CASE OF RONALD TRUE.

IN our issue of June 3rd we expressed the opinion that no case had been made out for not carrying into effect the sentence passed upon the convict True at the Central Criminal Court and subsequently upheld by the Court of Appeal.

Since that date the Home Secretary, acting under the powers vested in him by the Criminal Lunatics Act of 1884, has ordered the prisoner to be removed to a criminal lunatic asylum, where he will be detained during His Majesty's pleasure. The outburst of indignation which this action has excited shows that the view we took at least coincides with popular opinion. Sweeping legal subtleties aside it is clear that the average man considers that True was guilty of a brutal murder, was responsible for his acts at the time, and should suffer the full penalty of the law. Much of the indignation so widely expressed undoubtedly arises from a belief in the popular mind that improper influences have been exerted on behalf of the convict. It is freely stated that he is the offspring of a woman of social importance, and it is said that his reprieve has been brought about by assistance which a man without wealthy friends would not have been able to command. In his statement to the House of Commons on June 13th the Home Secretary explained that he acted strictly within the law and, as we gather, in accordance with the views of the judge who tried the case and of the Lord Chief Justice, who presided in the Court of Criminal Appeal. We have no hesitation in accepting his repudiation of the suggestions, so freely made, that improper motives have been operative.

If there has been any failure of justice—and this question we are not at the moment discussing—it would appear to be the fault of the law rather than of its administrators. Let us make this quite clear. We are not now dealing with the question of responsibility for crime or with the judges' answers in McNaughton's case. The present position is one which arises under Section 2 (4) of the Criminal Lunatics Act of 1884, which enacts that "in the case of a prisoner under sentence of death, if it appears to a Secretary of State, either by means of the certificate signed by two members of the Visiting Committee of the prison in which the prisoner is confined or by any other means, that there is reason to believe such prisoner to be insane, the Secretary of State shall appoint two or more legally qualified medical practitioners, and the said medical practitioners shall forthwith examine such prisoner and inquire as to his insanity, and after such examination and inquiry, such practitioners shall make a report in writing to the Secretary of State as to the

sanity of the prisoner, and they, or a majority of them, may certify in writing that he is insane." In acting upon the result of the inquiry the Home Secretary is guided by paragraph 1 of the same section, which runs: "Where a prisoner is certified in manner provided by this section to be insane, the Secretary of State may, if he thinks fit, by warrant, direct such prisoner to be removed to the asylum named in the warrant."

It would appear, therefore, that the Home Secretary was bound to order a further medical inquiry into the prisoner's state of mind, and the committee appointed for this purpose having reported that the prisoner was insane, the only question that arises is how far the Home Secretary was entitled to exercise discretion under paragraph 1. The words in that paragraph "if he thinks fit" suggest that he need not necessarily accept or act upon the opinion of the committee. On the other hand, the terms of the Act would seem to imply that if the committee finds the prisoner to be insane the Home Secretary shall cause him to be removed to a criminal lunatic asylum; if this is not the meaning of the Act there can be no point in holding the inquiry it directs shall be held.

The action of the Home Secretary from the legal point of view is accordingly not an overriding of the decisions of the Central Criminal Court and the Court of Appeal. It does not imply that True was insane either at the time he committed the crime or at the trial. The course taken is in fact that which is laid down by law to be followed when a prisoner becomes insane after conviction and while waiting for the sentence to be carried out. From the demeanour of the House it was clear that the Home Secretary had carried conviction on this point, and the motion for an adjournment did not receive the support of forty members as the rules of procedure require.

The case of Ronald True has, however, illustrated yet another unsatisfactory feature regarding insanity and the criminal law of this country. The Criminal Lunatics Act simply uses the word "insane" without any references to responsibility and without any attempt to define the word. From the medical point of view we know that it is impossible to frame a definition of insanity which shall cover all cases and exclude many who would not be regarded as insane. The *Times*, which has gone curiously wrong in its editorial comments on the case, has done a service by encouraging a correspondence to which Sir Herbert Stephen and Sir Maurice Craig have been the chief contributors; the former opened by stating the extreme legal view, saying quite definitely that some insane persons may, in spite of their insanity, be held responsible for their acts, and, if found guilty, suffer the penalty that the court may inflict. Yet the Criminal Lunatics Act would appear to provide such persons with a means of escape from their punishment.

We have already referred to the strong subcommittee which was appointed by the British Medical Association in 1913 to consider the state of the law with regard to legal responsibility for crime, and we feel more than ever now that action on the recommendations of that committee is called for.

THE ETIOLOGY OF CANCER.

THE interest the public takes in the discussion of the cause and prevention of cancer has been shown once more by a recent correspondence in the *Times*, but though among the contributors were some men of high intellectual powers and scientifically trained minds hardly any points new to the medical reader have been brought out. The fallacy of contrasting rates of mortality in different countries at different levels of statistical accuracy and medical efficiency is well known and was not avoided by all the correspondents, but, apart from this, the testing of hypotheses not prima facie unreasonable is a far harder matter than any of the writers seemed to realize.

Let it be granted—and we think it may be granted—that the increased rate of mortality from malignant disease in this country is not sufficiently explained by (*a*) improved methods of record and diagnosis, and (*b*) increase of the numbers exposed to risk at vulnerable ages. The vague conclusion that increasing "civilization" is responsible is unhelpful, if logical. Some correspondents suggest that an article of diet—for example, tea—or some other substance of increased consumption, such as tobacco, may be the culprit. It clearly may, but it is very hard to devise a method of testing the assertion. The statistical association of an increasing *per caput* consumption of tea and an increasing death rate from cancer takes us hardly any way: for consumption of tea we might substitute income tax, expenditure on the navy, circulation of cheap newspapers, or any other statistical ratio which has increased over the same period. The comparison of cancer mortality rates upon smokers and non-smokers is also not demonstrative, because the habit of smoking is not distributed at random; generally speaking, the minority of a population in respect of any widespread social custom are likely to differ from the majority in more ways than one. It is, of course, not beyond the power of modern statistical methods to handle many different variables, but the provision of a very large amount of accurately recorded information is essential, information that cannot be compiled by any existing statistical department. Few of the correspondents to the *Times* seem to have realized these difficulties. Thus Mr. Hudson writes, "'Statistics show that cancer only develops among persons of a highly nervous temperament,' says one correspondent. Well, here is a direct challenge to the statistician." A statistician before taking up this direct challenge will probably wish to know, first, what is the definition of a highly nervous temperament, and, secondly, where statistics are to be found which prove that such persons are particularly liable to cancer.

There are indeed many lines of statistical research which can be and, we believe, are being pursued. The General Register Office has steadily improved the statistics of incidence by primary site and an examination of these data suggests various lines of fruitful investigation. Similarly, materials are accumulating for the closer analysis of occupational incidence. But the number of years over which really comparable data can be compiled is still small. Importance also attaches to the correlation of incidence of other fatal diseases and cancer, a subject upon which Maynard, Greenwood and Wood, Clairmont, Brownlee, and others, have written. There is also the geographical distribution of the disease within the same country. The general level of accuracy of diagnosis is now perhaps sufficiently high to justify such studies in England and Wales. Above all, closer co-operation between the research officers of the central departments and insurance practitioners holds out the promise of valuable clinico-statistical investigations.

But, without in the least desiring to set bounds to the possibility of advance on these lines, we believe the impulse to discovery is likely to arise in laboratories, perhaps in connexion with such researches as those mentioned by Professor Joly. Alice was told that if she wished to meet the Red Queen the best thing to do was to walk in the opposite direction. The endowment of research in general rather than cancer research in particular may be better policy than to attempt to induce men of imagination to restrict their range.

THE CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

THE Congress of Radiology and Physiotherapy arranged in conjunction with our allies of France and Belgium, which had to be postponed last year owing to the railway strike, has been held at the Royal Society of Medicine on June 7th to 10th. In addition to attracting most of the leading radiologists and electrotherapeutists in Great Britain many well-known French and Belgian workers attended. As was perhaps to be expected, the Section of Radiology, over which Mr. Thurstan Holland of Liverpool presided, attracted the largest audiences, but the Sections of Electrology and Physiotherapy were well attended also, and altogether the Congress was a great success. This is, we believe, the first congress of the kind which has been held in this country, and there is no doubt that the papers read and the discussions which took place will have a definite and useful influence on the three somewhat specialized departments of medicine concerned. In the Radiological Section the two subjects for consideration—namely, the normal and abnormal stomach, and deep therapy—both proved attractive, especially perhaps the latter. Much difference of opinion was manifested with regard to the claims for exact dosage in the treatment of cancer made by, or emanating from, the Erlangen clinic. Probably the general view was that a very distinct step forward had been made in the method of applying *x* rays to this disease, an advance which might in the future have far-reaching effects, yet it was very doubtful whether the Erlangen claim to have discovered and defined a lethal and a stimulating dose could be substantiated. Warnings came from many speakers that the time had not yet arrived when the surgeon should be thrown overboard, but that, on the contrary, surgical removal of malignant growth should remain the first method of attack; *x* rays and radium, as Mr. Sampson Handley pointed out, should be regarded as additional weapons, and no surgeon could afford to do without them. The proceedings of the Physiotherapy Section included a visit to the Physical Training College at Dartford, and the foreign visitors were much impressed by the work which was being carried on there. Chief amongst the discussions in this section was that on cardiac disorders opened by Professor Bergonié, and it was generally agreed that the treatment of heart conditions was not complete if the ordinary medicinal methods were not followed up by those of physiotherapy, in which graduated exercises are an important element. Perhaps the most important communication in the Electrotherapeutic Section was that of Dr. Bourguignon, who described his own researches on muscle and nerve reactions by the chronaxie method. An international committee has been established, and it is intended that some time next year (1923) a second congress on similar lines shall be held in Paris.

HOW IT STRIKES A CONTEMPORARY.

THE members of the Congress of Radiology and Physiotherapy which met last week in London could not separate without dining together. On this occasion Sir Humphry Rolleston, President of the Congress, was in the chair, and the toast to the guests was committed to Sir StClair Thomson, who, rising to the occasion, made a speech full of wit and humour, which, out of compliment to the French and Belgian members present, was delivered in French. The English, he said, had been described as a people who passed the greater part of their lives in the open air, who knew no language but their own, and even in that expressed themselves with difficulty. But they had no false shame in the matter, and although they never troubled to learn the tongue of their neighbours they held open their gates and extended their hands. As he was speaking in French, and might rely upon the English portion of his audience failing to follow his remarks, he would let the visitors into a secret: he himself was not English but Scottish, and it was well known that the Scottish and the French were always in accord "pour embêter les Anglais." It was just because they had been neighbours of the English—the Scottish in the north and the French in the south—that they had had to wage such fierce combat in centuries gone by, but having fought as gentlemen and not as barbarians, the conflict being over, they made the best of friends. Englishmen, *pur sang*, were too modest to act as guides to their unknown island, and therefore he would charge himself with the duty of giving some information and counsel to the visitors from abroad. If they wished to understand England they must know, not merely that its inhabitants lived on an island, but that each inhabitant was himself an island—isolated, silent, uncommunicative. If they asked a favour of an Englishman he might not respond, or might even refuse, but by stealth he would perform whatever was asked of him, and then if he were thanked for it would get angry. If they spoke to the Englishman of his climate, his relations, or his Government, he would always give the same answer—that he detested them all and always. They would find that England was administered by the Scottish, governed by the Welsh, and harassed by the Irish. That was the reason why this was called the United Kingdom! The Continental visitors had come to this country in the hope of discovering the English. He himself had been discovering the English for half a century, and finding their welcome (when he came to understand them) so very warm, he had remained until he had become himself more English than the English. The English were a people who loved to be indolent, and yet they were very hard-working; they were melancholy, and yet of great good-humour; they were a clumsy folk, and yet very much alive and awake; rude, and yet engaging; and silent, but of great sincerity. The toast was responded to by Professor Daels of Ghent, who expressed the gratitude of his Belgian colleagues for their reception in London, and their appreciation of the comradeship of science which they found here; and by Professor Bergonié of Bordeaux, who spoke feelingly of British fraternization, alike in the great cataclysm of the war and in the troubled years which had followed it. Dr. Gunzberg of Antwerp added a few words, mentioning that it was in his city, in September, 1920, that, at a gathering of French and Belgian radiologists, with a few British visitors, the idea of a bilingual Congress was projected. The healths of the President of the Congress (Sir Humphry Rolleston) and the General Secretary (Dr. Stanley Melville) were received with great enthusiasm.

THE MECHANISM OF HEREDITY.

THE Croonian Lecture delivered before the Royal Society on June 1st by Dr. T. H. Morgan, professor of experimental zoology in Columbia University, New York, dealt with the mechanism of heredity, a subject to which he has made many important contributions. He began by pointing out that the changes that take place when the germ cells ripen are known to be of such a kind that, granting the hereditary elements are carried by the chromosomes, these changes may be made to serve as a mechanism furnishing an explanation of the principles of heredity discovered by Mendel. If, he continued, the criticism were made that these facts only showed a parallelism between the chromosomes and inheritance of characters, then the following evidence could be quoted as bearing very directly on the issue. In the course of the ripening of the germ cells irregularities occurred, he said, at times in the distribution of the chromosomes. These irregularities could be followed in successive generations, and the departures from the ordinary course of inheritance there shown were found to be *exactly* related to the new distributions of the chromosomes. Without a detailed account of this evidence it was not possible to do more than to state that the facts furnished most convincing testimony that the Mendelian characters are carried by the chromosomes. Not only was there evidence that the chromosomes were the bearers of the hereditary elements, but, owing to a phenomenon known as "crossing-over," it was possible to determine that the hereditary elements lay in a single line in each chromosome. It was even possible to form a rough estimate of the upper limits of size of these elements;

at the present time such estimates are necessarily very crude, and are interesting only as the first attempt to determine the size of the "gene."

PHYSIOLOGICAL EFFECTS AT HIGH ALTITUDES.

IN the Friday evening discourse delivered at the Royal Institution last week Mr. Joseph Barcroft, F.R.S., Reader in Physiology at the University of Cambridge, provided some details of the recent expedition to Peru, to study physiological effects at high altitudes, supplementing the account he gave to the Chelsea Clinical Society as reported in our columns on April 22nd (p. 648). The observations were carried out in the mining town of Cerro de Pasco, which is situated in the Andes, at a height of about 14,000 feet. Mr. Barcroft noted in passing the curious fact that at 12,000 feet there were cows which gave milk, and at 13,000 feet cows which gave little or no milk; this was not a question of fodder, because fodder was brought to the animals, and still they gave no milk. At 15,000 feet there were neither cows nor milk. Another point of interest was that fleas disappeared at 11,000 feet, though the louse accompanied man to a higher region. The Andes were chosen for this expedition for two reasons. The less important was that, unlike the heights on Teneriffe, to which the lecturer had previously gone as a member of an expedition, water was obtainable, by means of a water tower on the railway, right up to the level at which the work was done, and water, of course, was the first essential of the laboratory. The second reason was that in this case, instead of a mountain solitude, there was a community which had been acclimatized for generations to life at these levels. The people in this region were interesting ethnologically: they might loosely be called Indians, and their civilization, such as it was, probably dated back to before the days of the Incas. Many of them lived in chimneyless and windowless houses; they had a purely communal system of government, and some of their customs would hardly appeal to more civilized races. When a native was very ill, for instance, the date of his funeral was fixed without reference to his convenience, and an official saw to it that he was ready to keep the appointment! It was remarkable what loads the people were able to carry at these altitudes. A boy of about 13 would carry from the interior of a mine a burden of 40 lb., ascending a staircase with it from a point 250 ft. below, while a full-grown man would carry a hundred pounds of metal; yet the European was out of breath if he carried his coat up a slight incline. Even the native, however, only accomplishes the work with great panting and with many intervals for rest. *X*-ray photographs of the chests of some of the natives showed that the ribs started almost horizontally and went round the chest like the hoops of a barrel. According to tables of chest measurements in relation to the length of the spine, the natives in this region should have a chest measurement of less than 80 cm., whereas their usual chest measurement was 90 cm. The native who was 5 ft. 2 in. in height had a chest which should belong to a man of 5 ft. 11 in. Mr. Barcroft dealt also with blood changes. The immediate effect of the ascent was greatly to increase the number of red blood corpuscles, and although this excess was somewhat reduced later, the blood of members of the expedition showed throughout a larger proportion of young blood cells than normal. Comparative *x*-ray photographs showed also that the heart tended distinctly to become smaller. Mr. Barcroft closed by appealing for the establishment of some institute and laboratory which should continue permanently the study of the physiological effects at high altitudes.

MEDICAL SCIENCE AND THE THEATRE.

Pasteur is the title of the play with which M. Lucien Guitry, the eminent French actor, has this week opened his repertory season in London. The piece, which was played last year in London on a few occasions by M. Guitry, was first produced in Paris in 1919. It no doubt owes something to the successful production in this country of *Abraham Lincoln*, for both plays depict a great man in selected scenes at different periods of his life. The author of *Pasteur* is M. Sacha Guitry, son of the actor, who admittedly found his inspiration in Vallery-Radot's biography of Pasteur, and designed the play especially to suit the talents of his distinguished father. The first act shows Pasteur in his study with his pupils at the outbreak of the war of 1870. In the second act there is a moving representation of a meeting of the Academy of Medicine, where Pasteur vigorously combats an attack upon his theories; in this scene the audience plays the part of the members of the Academy, with one or two actors speaking from the stalls. In the third act the boy Joseph Meister, who has been bitten by a mad dog, is brought to be inoculated by Pasteur, who sends for a doctor to perform the inoculation, for Pasteur himself held no medical qualification. The dramatist shows his art at the close of this act, for Pasteur, although he knows he can give no help, stays on all night in case something unexpected may happen. The scene changes in the fourth act to Pasteur's home in the country, where he his ill and on the verge of a breakdown; his friend the doctor tries to persuade him to take a rest, but Pasteur is deeply engaged in the study of epilepsy and cannot tear himself away. To him comes again Joseph Meister, now a youth, and a delightfully sympathetic scene ensues between the two. The last act is the crown of Pasteur's career, his reception by the President of the Republic in the amphitheatre of the Sorbonne, crowded by his friends, among whom is Lister, whose name is announced, although he does not actually appear on the scene. The play has no "love interest" and no female character, and follows no dramatic rules; it is practically a series of monologues, in which the actual words of Pasteur are often used, and its only unity is in the portrayal of its chief character. It is a triumph for M. Lucien Guitry, who appears to live the part of the simple, unaffected, kindly man of genius. A play of very different character is announced by Mr. Bourchier for production in London at the end of this month—*Le Caducée*, by "André Pascal," a pseudonym of Baron Henri de Rothschild, who is a doctor of medicine and a philanthropist, as well as a playwright. *Le Caducée* was given with much success in Paris last year, and depicts the career of a Parisian surgeon, an unscrupulous charlatan, who sells the antiques in his consulting rooms on commission, splits fees with the doctors who send him patients, encourages the visits of reporters and photographers to his operating theatre, performs unnecessary operations and kills his patients, and at the end commits suicide. There are some thrilling scenes in the play, and one medical character, "Professor Godfroy," is well portrayed; but its whole atmosphere is extremely distasteful to anyone to whom the honour of the medical profession has a meaning at all, besides being grossly untrue to life, certainly in England, and probably also in France.

MEDICINE AND INDUSTRIAL LEGISLATION.

SIR THOMAS OLIVER, at the conference of the Royal Institute of Public Health at Plymouth, read a paper giving an account of some of the social and medical gains of industrial legislation, in the course of which he said that factory life was a unity, and the hygienic problems it presented could be satisfactorily settled only by a combination of medicine, capital, and labour. It was being suggested in the United States that each trade union should organize its own health work and conduct it with the co-operation of the Workers' Health Bureau, but he thought that in this country labour should not attempt to act single-handed, but should trust the Home Office and employers, and co-operate with the leaders of industrial hygiene, who were neither the partisans of employers nor the patrons of labour, and who were able on that account to take a wide view of industrial health problems. In the benefits it sought to bestow preventive medicine was indivisible. To split it up in the manner suggested by the trade unions of the United States would inevitably lead to the intrusion of politics. The Employers'

Liability Act had been superseded by the Workmen's Compensation Act, whereby compensation was given for personal accidents where no one was at fault. The benefits of this Act were extended to most trades, including agricultural labourers, with the result that thirteen millions of workpeople were brought within its sphere. The object of the Act was to compensate for accidents, but, as in the courts of law the term "accident" was difficult to define, considerable difference of opinion had arisen at times as to what really constituted an accident. The coexistence of disease and accident intensified the difficulty, since where a sick person met with an accident and died from it shortly afterwards it might be a question whether death was the result of the injury or of the pre-existing illness. The trend of industrial legislation during the last half-century had been in the direction of the protection of life in occupation, the preservation of the health of the workers, and, in the case of accident and ill health traceable to occupation, the provision of compensation. There was a growing disposition to demand more and more assistance from the State, and the State unfortunately had yielded too readily to the clamour. One way by which the increasing call upon the resources of the State might be lessened would be to make each industry capable of meeting the financial claims consequent upon the death of workers. The National Insurance Act provided relief for the time being, but there was no reason why life insurance should not apply to a whole factory, so that in the case of death of any one of the workers a sum of money might be paid to the widow and children of the deceased. There were insurance offices willing to undertake the risk, and to pay £100 to a workman's dependants, in return for 6d. a week for each worker employed up to the age of 65 or 70. Such a scheme might well be contributory. "Group life insurance," as it was called, had already found favour in the United States, where it was run entirely by employers, who found in it one means of keeping the men longer attached to a factory, of diminishing labour turnover, and of creating a better feeling between employers and employed. No medical examination of workpeople was required, since they were insured *en bloc*, and the insurance office paid quite irrespectively of the cause of death. Trade unions preferred such a method of insurance as this to the granting of pensions, since to obtain a pension workers would be obliged to render at least twenty years' service in a particular factory.

A CORONER AND THE OATH.

OUR attention has been called to an inquest held recently at the Durham Workhouse, in which the medical witness asked to be sworn in the Scottish fashion. The coroner is reported to have replied: "Why on earth quibble about it on such a hot day? You are in England now, and if you don't take the oath I will either commit you or refuse to take your evidence." To a further protest the coroner replied, "Fiddle-de-dee." The medical witness then took the oath, holding the testament while the oath was administered. It would seem that the coroner was wrong in refusing to swear the witness in the Scottish fashion, for in 1893 the Home Office issued a circular to magistrates, clerks, coroners, etc., which quoted from the Oaths Act of 1888 to the effect that if any person desired to swear in the Scottish manner he should be permitted to do so without further question. There is nothing in the Oaths Act of 1909 withdrawing this right. We do not consider that the question is of much practical importance, for now that the insanitary practice of kissing the book has been abolished, the difference between the present English and the Scottish methods would, to most people, be immaterial. We must, however, record a protest against the deplorable exhibition of bad manners on the part of the coroner. In former years, when coroners were not concerned to do much more than find a verdict of death from accident, murder, or natural causes, as the case might be, the part played in an inquest by the medical witnesses was relatively small. But with growing social development it becomes more and more important for many purposes to ascertain scientifically the precise cause of death, and to achieve this purpose close and cordial co-operation between the coroner and the medical witnesses is essential. Co-operation, however, is not promoted by such unseemly outbursts as that described above.

THE FELLOWSHIP OF MEDICINE.

THE *Bulletin* of the Fellowship of Medicine and Post-Graduate Association for June contains quotations from letters addressed to the secretary by visitors from abroad who have benefited by the post-graduate courses in London; they express their gratitude to the Fellowship and incidentally their appreciation of the courtesy and ability with which the secretary, Miss Margaret A. Willis, has discharged the duties of that office. All who are acquainted with the work of the Fellowship of Medicine and Post-Graduate Association know that Miss Willis has well deserved this praise, with which we wish to associate ourselves. One of the letters quoted is from an American graduate, who says that during a two months' visit he found the work well organized and instruction much more readily available than he had been led to believe. "The general plan is excellent. If the hospitals are a little scattered the transportation system is the best in the world. The men who give the instruction are in general of such high calibre and the instruction is on such a sound basis that I see no reason why London should not increase steadily in importance as a post-graduate centre." He goes on to express the hope that it will be possible before very long to publish a schedule for six months or a year ahead, so that men from other countries may be able to arrange their visit to the best advantage. Another letter quoted is from an Australian graduate; he considers that when all the difficulties are considered the results achieved are quite remarkable. With regard to the American graduate's suggestion that a handbook should be published, the editor of the *Bulletin* points out that the question of finance comes in, but expresses the hope that before long the financial position will permit of an advance in propaganda undertakings. We can only trust that this hope will be fulfilled.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THE annual dinner of the West London Medico-Chirurgical Society was held at Princes' Restaurant, London, on June 7th, with the President, Sir George Lenthal Cheatle, in the chair. After the loyal toasts had been honoured, Mr. W. McAdam Eccles proposed the toast of "The Imperial Forces," to which Lieut.-General Sir Arthur Sloggett responded. The toast of "The West London Medico-Chirurgical Society" was proposed by Sir Anthony Bowlby, P.R.C.S., and in response the President briefly summarized the history of the society, mentioning the names of the many famous physicians and surgeons who had been closely associated with it. It had, he said, always encouraged general practitioners and consultants alike, and the number of young medical men who were members had been a feature of the society from its foundation. The toast of "The Cavendish Lecturer" was proposed by Sir Arthur Keith, who welcomed Professor Harvey Cushing as a surgical ambassador from the United States to this country. In response to the toast Dr. Harvey Cushing said that at present, on the invitation of the authorities of St. Bartholomew's Hospital, he was acting for a short time as director of its surgical professorial unit, returning the visit that Mr. Gask had made last year to the Brigham Hospital, Boston, U.S.A., as temporary surgeon-in-chief. Such an interchange of teachers between the medical schools of America and England was evidence of the sincere friendship which existed between the medical profession in the two countries, and had received so great an impetus from their close association in the British Expeditionary Force during the war. The toast of "Kindred Societies and Guests" was proposed by Sir Alfred Rice-Oxley, M.D., Mayor of Kensington, who received many congratulations during the evening on the knighthood with which he had just been honoured. The toast

was acknowledged by Mr. James Berry, president of the Medical Society of London, and Sir William Willcox, president of the Harveian Society. The toast of the President, given by Mr. Rickard Lloyd and acknowledged by Sir G. Lenthal Cheatle, brought the evening to an end.

A LETTER OF EDWARD JENNER.

THE May number of the *Canadian Medical Association Journal* contains, with comments by Dr. M. E. Abbott, an interesting unpublished letter by Jenner. It is dated April 11th, 1808, and is addressed to Miss Newcome, Gresford Parsonage, near Chester. From a facsimile of the address, the mere transmission of the letter from Cheltenham to Chester appears to have cost 1s. 6d., and as Jenner's correspondence was immense, his outlay on postage must have been very heavy. Through Miss Newcome he congratulates certain ladies on the success of a vaccine campaign on which they were engaged, and replies to several questions. The vaccine mark, he says, is similar to that of the natural cowpock, but its form depends on how it was produced by the lancet; next, the security conferred by the vaccination is obtained by the eighth day if the pock has proceeded regularly up to that time. The third question, "Is it a preventive of itself?" elicits the reply, "Not uniformly so." Both question and answer are so condensed that, in the absence of the text of the ladies' letter, the meaning is not absolutely clear, but the point appears to be whether one vaccination prevents a second. Jenner's reply may be taken to mean that he had seen cases in which it had been possible to cultivate vaccinia on the arm of a previously vaccinated subject. He does not say whether the explanation might sometimes be found in the character of the primary operation, or in lapse of time, or in individual idiosyncrasy. But he was not writing a disquisition; he was only answering a letter. A further question was, "Why is the scab the least eligible source of infection?" and the reply is that its outer edges would be formed only at a late stage—after the areola was complete—but that matter from the centre would be more likely to produce a perfect pock. After commending the ladies for the method and accuracy of their case records, and making reference to an outbreak of small-pox at Ringwood in Hampshire, Jenner answers a fifth and final question by relating a little incident which had given him much pleasure. "A fine little boy, about 6 years old, came to my house in town last spring, and presented me with a nosegay. He was accompanied by his mother. 'Pray, young gentleman, who are you?' said I. 'Edward Jenner,' said the boy. The mother then told me that his unhappy father died of the small-pox just at the time he was born, and in the same room, and that Dr. King, who attended her, vaccinated her infant at *half an hour old*. Thus was he shielded from the horrid pestilence that had destroyed his father. Don't you think the little urchin's bouquet smelt sweet?" Then he goes on to say that though in emergency no time is too early for vaccination, yet, when there is a choice, it may be prudent to defer the operation till the infant is a month old.

THE MEDICAL SCHOOL OF COLUMBIA UNIVERSITY, N.Y.

IN his annual report for the year 1921 the President of Columbia University, New York, Professor Nicholas Murray Butler,[1] whose numerous degrees include the Honorary LL.D. of no fewer than sixteen universities, says much that is valuable on educational problems, and particularly those of medicine. Medical teaching has become extremely costly, and indeed is, he says, the spoilt child of education. Nevertheless it is, he affirms, about half a century behind other forms of higher instruction, as a result of what may be described as the intellectual isolation of the medical profession. There is therefore, he alleges, need for a very severe critical investigation of medical teaching by a body of experts in educational processes. As long ago as 1769, in his famous Commencement Address, Dr. Samuel Bard, Professor of the Practice of Medicine in King's College, New York, set out the essentials of a public hospital, medical teaching, and research. The very long delay in realizing this scheme is as much as anything attributed to the feuds, jealousies, and rivalries of the medical profession in New York during the last century. The President therefore considers that the most notable achievement of a notable year has been to clear the way for carrying into quick effect the project for the development of the medical school in a manner fully worthy of its opportunity. This has been rendered possible by the cordial co-operation of the Presbyterian Hospital and by generous provision, whereby the sum of fifteen million dollars, necessary for the satisfactory success of this scheme, has been practically assured. The professors of clinical subjects are to be university professors in fact as well as in name, will be called on for full-time academic service, and will be provided with adequate salaries; they will come under the following statute of the University: "No officer of instruction shall be employed in any occupation which interferes with the thorough, efficient and earnest performance of the duties of his office." But the literal obligation thus implied is not to be too rigidly insisted on in practice, and the President, on whom rests the responsibility of determining when in any given case the statute may appear to be violated, takes the wise view that arbitrarily to deprive a university officer of opportunities for practical experience, even where they bring pecuniary reward, is to decrease and not to increase his scientific and educational usefulness. One of the main objects of the modern university is to keep its teachers and organizers of research from becoming too academic, too narrowly limited to their work in the university, and too remote from the outside world. In establishing full-time service for clinical professors it has not been thought necessary or advisable to adopt any of the methods, some of them fantastic and bizarre, that are understood to have been proposed elsewhere. Professor Butler points out that Columbia University has an exceptional opportunity to go forward without delay and without great expense in carrying out its plan for post-graduate courses in medicine. This attitude would not be unworthy of the sincerest form of flattery by a university within a hundred miles of South Kensington.

[1] *Columbia Univ. Bull. of Information*, 1922, ser. xxii, No. 5, pp. 1–62, January 14th. Annual Report of the President, 1921.

"PHYLLOSAN."

FORMS sent out recently by the publishers of the *Medical Directory* to medical practitioners, for the purpose of correcting the entries in the forthcoming edition of that work, have been accompanied by a leaflet issued by the Chlorophyl and Chemical Corporation, Ltd., advertising the preparation known in this country as "Phyllosan." One side of this leaflet is headed "Authentic Evidence of Efficiency from the Leading Medical Press of the World," and the references given include the BRITISH MEDICAL JOURNAL, March 4th, 1922, but no indication is given that this is a reference to our advertisement pages and not to our editorial columns. The only editorial reference to Phyllosan that has appeared in the BRITISH MEDICAL JOURNAL was an article published on February 25th, 1922 (p. 317), and to this notice we would direct the attention of members of the medical profession who may possibly have been surprised by the leaflet issued by the Chlorophyl and Chemical Corporation, Ltd., in the envelopes containing the *Medical Directory* forms.

ON June 4th, at the special invitation of the governors and the medical school, Professor Harvey Cushing took over the directorship of the surgical unit of St. Bartholomew's Hospital and replaced the director, Mr. Gask, for ten days. The compliment was, as it were, a return for a like compliment

paid to Mr. Gask last year, when he acted as temporary chief of the Peter Brigham Bent Hospital, Boston, to which Dr. Harvey Cushing as professor of surgery at Harvard is surgeon. Dr. Cushing was elected an honorary Fellow of the Royal College of Surgeons of England in 1913, and in recognition of what he did for British soldiers during the war, when he worked at various casualty clearing stations in France and acted as consultant in head injuries, he received the C.B.

THE next of the exchange lectures with Dutch universities arranged by the University of London will be given on Wednesday next, June 21st, by Dr. A. A. Hijmans van den Bergh, professor of pathology at Utrecht. The subject is "The pathology of haemoglobin." The chair will be taken by Sir Frederick Andrewes, M.D., F.R.S., at 5 p.m. A reception will be held at 4.30 p.m.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons resumed its sittings on June 12th.

The Case of Ronald True.

The action of the Home Secretary in remitting the death sentence upon Ronald True and ordering his committal to Broadmoor Asylum was the subject of questions in the House of Commons on June 13th.

The Home Secretary's Statement.

Mr. Shortt, replying to a question addressed to him by Mr. Stanley Holmes, made a lengthy statement. He said he hoped to show that the course taken by him was in every way essentially what would have been taken, and could only have been taken, by any other Home Secretary, and was in entire accordance with the practice in every case in the past for very many years. He understood that his action had been criticized on two grounds: First, that he should not have instituted the medical inquiry into the mental condition of True; and secondly, having received the report, he need not have acted upon it. It had been suggested that he, in instituting the further inquiry, had in some degree reopened the issue, whereas he should have regarded it as having been closed by the findings of the jury by which the case was tried. It was alleged that he had slighted the verdict of a British jury and the decision of the Court of Criminal Appeal. He maintained that he had done nothing of the kind.

Mr. Shortt then quoted Subsection 4 of Section 2 of the Criminal Lunatics Act of 1884, under which if the Home Secretary had reason to believe that a condemned prisoner was insane it is laid down that he "shall" order an inquiry. (The subsection is printed at p. 963.) At that time he had before him the reports of the two prison doctors who had had the prisoner under close observation for nearly two months. These doctors gave evidence at the trial, as did two other medical men, that the prisoner was certifiably insane. He knew also that no rebutting evidence was called during the trial, for the reason that the prosecution found itself unable to obtain such evidence. This did not mean that the jury were wrong in finding the prisoner guilty. There were, in fact, two issues which were quite distinct. The first was: Was the prisoner at the time he committed the offence insane within the limits of the doctrine of criminal responsibility as laid down by the courts? That was a question on which the jury gave an answer. The further question which arose under the Act was whether the prisoner at the time of the statutory inquiry (being then under sentence of death) was insane within the meaning of the Act so as to be certified and removed to an asylum. That question was left by the statute to the unfettered judgement of two or more medical men; and in instituting such a medical inquiry he was in no way running counter to the views of the judges. On the contrary, the judge who tried the case in the first instance, in reporting that he had passed sentence of death, drew the special attention of the Home Secretary to the medical evidence as affording matter for further consideration, and at the conclusion of the appeal the Lord Chief Justice said that there were certain powers which in proper cases were always exercised by the Home Secretary. In summing up his information Mr. Shortt said that he thus had (1) the report of the prison doctors saying they considered the prisoner at the time certifiably insane; (2) the request of the learned judge who tried the prisoner that he should carefully consider the evidence as to insanity; and (3) the very plain hint of the Lord Chief Justice. If in these circumstances he had neglected to put the provisions of the statute into operation by directing a medical inquiry, he would have been guilty of a flagrant breach of public duty, and when challenged he would have had no defence.

Mr. Shortt next came to the second point of criticism—that having received a report that the prisoner was insane he was not bound to act upon it. He said that those who took that view were under a complete misapprehension. The principle that an insane man should not go to execution had been enshrined in the law of this country for at least 300 years. He quoted Sir Edward Coke, Sir Matthew Hale, Serjeant Hawkins, Blackstone in his *Commentaries*, a solicitor-general of the time of William III, and Stephen in his legal *Commentaries*. All these quotations set forth in unequivocal language that an insane man should not be put to death. Mr. Shortt next referred to the eminence of the doctors whom he asked to serve as a committee of inquiry. Two of them were most highly experienced official doctors, who had had long prison experience. One of these two had been superintendent at Broadmoor Asylum, the other was a prison commissioner. Both were men who for years had had the complete confidence of all the judges when giving evidence as to sanity or insanity. The third doctor, Sir Maurice Craig, was a very well-known specialist. When these doctors unanimously reported that the prisoner was certifiable by the law of the land, reprieve had to be granted.

Mr. Shortt afterwards dealt with what he described as the cruellest criticism that could possibly be made against him—the suggestion in some quarters that he had been actuated by some influence in the form of aristocratic pressure on behalf of the prisoner. He assured the House that he knew nothing as to who True was or who were his relations. No communication had been made to him except by the learned judge, and no communication had been made to the Home Office until the committee was set up, when the solicitor for the defence presented a petition for reprieve, as generally happened in these cases. Subsequently Dr. Dyer saw a relative in order to take evidence as to the prisoner's antecedents.

Mr. Shortt closed by asking the House to believe him when he said that he was actuated in this case, as in other murder cases, solely by the merits of the case; he was loudly cheered as he sat down.

Mr. Stanley Holmes asked leave to move the adjournment of the House to discuss the question.

The Speaker said he must make it quite clear that no question of adjournment could arise on the advice tendered to His Majesty by the Home Secretary with regard to a reprieve or the contrary. That principle had been the settled practice of many years. He put the question to the House on other grounds. The question could only be as to whether the Home Secretary had acted rightly under the powers which were entrusted to him in this matter.

Only twenty-eight members rose in their places; as the number requisite for leave to move the adjournment is forty, the motion fell to the ground.

Mr. Shortt was again cheered as he left the House.

Ministry of Health Vote.—In the vote for salaries and expenses of the Ministry of Health, Sir Alfred Mond, on June 13th, stated that the estimates of his department showed a reduction of £1,372,000, without any diminution of the outlay on public health services such as the treatment of tuberculosis, maternity, child welfare, and venereal diseases. Referring to the promise of the Rockefeller Institute to give two million dollars (£400,000) to found a school of hygiene in London if the necessary money for maintaining it were provided, he reminded the House that he had promised that if the work could be done for £25,000 a year, that amount should be furnished; in a couple of years this service would be begun. The total amount of grant so far paid out to voluntary hospitals was about £103,000 in London, and about £39,000 in the provinces.

Chemicals for Research Work.—Dr. Raw asked, on June 12th, whether the President of the Board of Trade was aware of the statement of the secretary of the Royal Holloway College, that as a result of the passing of the Safeguarding of Industries Act, one-third to one-half of the time of research workers was spent in preparing compounds which formerly could be bought. Mr. Baldwin said he was aware that such statements were made. Imports were not prohibited. He suggested that research workers should place themselves in direct communication with British makers of fine chemicals; they would welcome any detailed criticism and co-operation in the development of the British industry.

INJURIOUS AGENTS AND GROWTH.

DR. MURK JANSEN'S LECTURE.

ON June 12th a lecture on "Injurious agents and growth" was delivered at the house of the Royal Society of Medicine, under the auspices of the University of London, by Dr. MURK JANSEN, O.B.E., lecturer on orthopaedic surgery at the University of Leyden, Holland. The chairman, Professor ELLIOT SMITH, F.R.S., referred to the pioneer work of Dr. Jansen as an orthopaedic surgeon of international reputation, as one of the men who has done most to bring the medical profession in Holland and England into closer touch, and as a sympathetic friend of our soldiers and sailors interned in Holland.

The lecturer showed how his method of determining the causal factors and explaining the symptoms of feebleness of growth is based on the comparison of children of the same parents—preferably chosen from large families—with regard to the injurious influences to which they have been subjected either before or after birth. Three fundamental principles of feebleness of growth were enunciated:

1. The feebleness of growth is proportional to the intensity of the injurious agent.
2. Feebleness of growth is proportional to the rapidity of the growth of the individual and its parts, so that the main effect of the injurious agent falls upon that part of the body which is growing most rapidly at the time the injury is inflicted.
3. Feebleness of growth is characterized by enhanced sensibility to the injurious agent and enhanced fatigability.

Achondroplasia was discussed as an example of congenital feebleness of growth. The shortening of the base of the skull, the tilting upward of the posterior margin of the palate, and the dorso-lumbar kyphosis were regarded as due to increased folding of the flexible sclero-blastemous skeleton between the third and sixth weeks of embryonic life, as a result of the increased hydrostatic pressure produced by an amnion which was lagging in growth. The increased amniotic pressure led not only to positive pressure signs but also to relative anaemia of the foetus by expression of the blood.

As an example of feebleness of growth after birth, the serial members of large families were discussed. In a given family, for example, the eldest child exceeded normal height, and presented the four classical symptoms of muscular weakness—namely, round back, protuberant abdomen, flat feet, moist and blue extremities. This child had a musculature too weak to bear the body weight; in short he had "outgrown his strength." The succeeding two or three children were of average height, displayed muscular weakness, and in addition some degree of knock-knee, so that the stress of the injurious agent fell on the region of most rapid growth—that is, at the growth discs or epiphyses in the neighbourhood of the knee. The remaining children displayed less than the average height and marked muscular and skeletal changes ranging from the so-called rachitic condition to that of pedatrophy or athrepsy.

The tissues which undergo most rapid growth from the newborn to the adult condition are muscle and bone, the muscle increasing from 25 per cent. in the newborn to 43 per cent. in the adult, and the skeleton increasing from 14 per cent. to 18 per cent. The growth in length of the skeleton takes place at the epiphyses and the greatest increase in length takes place at the epiphyses bounding the knee. Accordingly the clinical facts accord with the three principles enunciated, and the stress of the injury falls on the fast-growing cell groups, so that the result is muscular weakness, muscular weakness with knock-knees, rickets involving the ends of the bones, rickets involving the shaft of the bones, and lastly complete athrepsy.

The histological characters of the epiphyses were next considered, and the costo-chondral junction was taken as a type. The histological section displays three zones—namely: (1) a zone of multiplication of cartilage cells; (2) a zone of enlargement and specialized arrangement of cartilage cells; (3) a zone of cell differentiation where cartilage cells become differentiated in accordance with the formation of bone. Cell differentiation is more vulnerable than cell enlargement, and cell enlargement more vulnerable than cell multiplication, so that a given injurious agent will lead first of all to failure of cell differentiation with heaping up of the cartilage cells to form an enlargement; a stronger injurious agent will lead to lack of differentiation and lack of cell growth; still stronger injurious agents may lead to the third degree—that is, lack of cell division.

The manner in which feebleness of growth was characterized by enhanced sensibility and enhanced fatigability was shown by a series of curves in which functional pressure was plotted on the horizontal axis and growth on the vertical axis. The curves for normal skeletons, for skeletons with slight feebleness of growth, and for skeletons with severe feebleness of growth were discussed in a most suggestive manner.

In conclusion Dr. Jansen indicated that the purpose of this work on feebleness of growth was essentially prophylactic. Sufficient evidence had been adduced to justify the need for the protection of the mother from overwork, poverty, and worry. The results already obtained with regard to the vulnerability of the fast-growing cell groups to injurious agents justified an inquiry into the action of alcohol and tobacco on the father, an inquiry which had already been made in the case of the harmful effect of x rays. A hearty vote of thanks was accorded the lecturer.

MEDICAL TERMS IN THE VERNACULAR AND THE DIALECTS.

III.

SMITTLE AND SMIT.

EVERY doctor in Scotland and the North of Ireland knows that smittle means infectious, but the word is so widespread in English dialects also as to be in use in all the northern counties, as well as in Derbyshire, Lincoln, and Nottingham.

Like so many vernacular medical words, smittle (as verb, noun, and adjective) has several forms: in Yorkshire it sometimes appears as smickle (verb and noun), but more commonly, as in many other counties, as smit (verb and noun), and as smitting (participle); in some parts of Lancashire it is transformed into smitching, and in some other parts of the North of England the word used is smittling, and in Fife smittral; smittleish or smittlish is fairly widespread. Smittleness is, of course, infection; a smitting sickness is an infectious disease. Smiting and smitten are not, strictly speaking, forms, although in meaning they approximate.

Smittle, according to the *New English Dictionary*, is derived from the verb smit, which means to stain, contaminate, tarnish, mark (as one does sheep), and to infect or affect by contagion. Smit, again, has been formed on the Old English smittian, the weak grade of smitan, to smite; and it is to be noted that smite in obsolete senses meant to pollute, blemish, or smear. In other Teutonic languages there are similar words with like meanings. Thus in Swedish there are smitta, smittkoppor (small-pox), smittsam, and smittsamhet (infectiousness); and in Middle Swedish there was the almost identical word smittol (infectious). In Norse smittestof means contagious matter. Dr. James Colville[1] connects smittle with the Icelandic smeita, steam from cooking fat. In Dutch there is smet, meaning a blemish or spot; and Dr. Colville[2] points out that when a Boer in South Africa, speaking the Taal, says "daar teekens is van een besmettelijke ziekte" (there are tokens of an infectious sickness), he is not far from the vernacular smittle. In German, likewise, there is schmitz, a stain, and schmütz, filth. It would be easy to pass more widely into less established etymological relationships, as, for instance, through smite into such meanings as to throw, to strike, to smear, or through smut into smudge and blacken; but this would be to leave the present-day signification of smittle, although it is of some weight that the editors of the *New English Dictionary* think that the sense of throwing is perhaps the original. Dr. Johnson does not give smittle in his dictionary, and Bailey gives only smiting, meaning infectious, as in use in Lincolnshire.

Thomas Carlyle, in writing of the words sclavic and slave, reflects, "What long-drawn echo of bitter rage and hate lies in that small etymology!" and, in dealing with smittle, we may similarly see underlying the word no little past terror and dread. We go back in thought to the dreary days and the gloomy nights when some plague or pestilence or Black Death was sweeping over these islands, and when our ancestors, escaping from the towns and fleeing even from each other, would whisper the "creepy" word smittle and visualize dimly some horror of a malign force casting death-laden evil things at mankind, baleful and noisome. All was mysterious, weird, and full of awe; often the plague was communicated

from one individual to another—that is, smittle; sometimes it apparently passed by and the "contact" escaped, but one could not tell. It will be said that now much more is known, and that in cocci, bacilli, and spirilla any microscopist can see the causes of smittleness or infectiousness, which were hidden from his ancestors; but there is a danger that even the modern pathologist knows not why or how they actually produce disease, or why they do so at one time to the height of an epidemic, and why at other times they lie quiescent. Smittle is still a "small etymology" which has something of terror for us, when we think of our ignorance of its ultimate nature and mode of working or leaving alone. When a doctor in India meets a swarm of flies which have been resting on a group of lepers and are now winging their way towards him he confesses to at least a feeling of apprehension; influenza gives the nation an annual scare; and pneumonic plague is a horror.

Smittle and smit are met freely in the literature of Scotland and the north of England, and are in every day employment in the tongue of the people. Andrew Wyntoun (1350?—1420?), the Scottish historian, who fortunately wrote his *Chronicle* in the vernacular and not in Latin, used smit in the figurative sense of moral contamination as well as in the literal meaning of a spot or taint or infection. With the meaning of infected, smit was used, as Jamieson pointed out in his *Scottish Dictionary*, in the Acts of James I of Scotland, the disease referred to being leprosy: "that the Bishopis, Officiallis, and Denis inquyre diligentlie in thair visitatioun of ilk paroche kirk, gif ony be smittit with lipper." Smit was even admitted to the high rank of a proverb word as in the saying,[3] "ae scabbit sheep will smit a hail hirsell" (flock). In the sense of pollute, Whyte Paterson uses smit[4] in the sentence, "for I ne'er wad lat wrang smit my lips." Smittle (in Scotland, at least) has generally been more restricted in its meaning, and has uniformly indicated infectious or to infect. Wright, in the *English Dialect Dictionary*, has given many illustrative quotations: "Such was the dread of the smittal disease, that they wouldna let them into the toons wi' the corps"; "there never was a plague, either on beast or body, mair smittal than that [rinderpest]"; "our trouble seemed a smittal one." The last quotation comes, it is interesting to note, from a book written by a medical man, D. M. Moir of Musselburgh, better known as Delta, the popular contributor to *Blackwood's Magazine*. Similar usage obtains in the north of Ireland: "hoo did ye get the maisels?" "a wus smit at the skael"; "they say the coul's smittal."

In the dialects of Northern England smit and smittle have wider meanings than in Scotland and Ireland. Sometimes they have the signification of infect as in the Lincolnshire question, "are measles smitting?" the Yorkshire phrase, "she's getten fever, an'll smit tha," and the Westmorland "small-pox are very smittle"; but they have also the sense of similarity, as in the Yorkshire phrase, "she's the smit of her mother"; or that of smutted, as in "smitted clothes are the plague of the housewife on the washing day"; or that of "marked" like sheep. Farther away from the original meaning is that of "likely," as in the Northumberland "it's a smittal spot for a salmon"; and still farther is that of "sure" or "certain as a stock-getter" in the Cumberland expression, "as smittal as t' smo'-pox," said of a successful male animal kept for breeding purposes. One can, however, trace the connexion in idea.

J. W. B.

REFERENCES.

[1] *Studies in Lowland Scots*, p. 314. [2] Op. cit., p. 210. [3] Henderson's *Scottish Proverbs*, 1881, p. 87. [4] *The Proverbs Rendered in Scots*, 1916, p. 35.

ACCORDING to a recent census the increase of the population of Paris during the last ten years is confined exclusively to the foreign inhabitants, the number of whom has increased from 158,000 in 1911 to 169,527 in 1921. The female population is largely in excess of the male. The differences between the two sexes is greatest between the ages of 20 and 30.

THE fourteenth Congress of the Italian Psychiatric Society will be held in Rome from October 19th to 21st, when the following subjects will be discussed: (1) Nosography and pathogenesis of the psychoneuroses, introduced by Professors Modena of Ancona and Morselli of Genoa; (2) pathogenesis of so-called essential epilepsy, introduced by Professors Besta of Milan and Roncoroni of Parma; (3) schizophrenia and pseudo-schizophrenia, introduced by Professors G. Montessano of Rome and Kolijlinskij of Genoa; (4) pathological anatomy of psychasthenia, introduced by Drs. Arctini of Arezzo and Pilotti of Rome.

England and Wales.

CONGRESS OF OBSTETRICS AT LIVERPOOL.

THE British Congress of Obstetrics and Gynaecology will be held in the Medical Institution, 107, Mount Pleasant, Liverpool, on Friday, June 30th, and Saturday, July 1st. The following bodies will take part: Royal Society of Medicine (Obstetrical and Gynaecological Section), Edinburgh Obstetrical and Gynaecological Society, Glasgow Obstetrical and Gynaecological Society, Midland Obstetrical and Gynaecological Society, Royal Academy of Medicine (Obstetric Section), and the Ulster Medical Society. The proceedings will include a discussion on the results of treatment of eclampsia, and operations at the Liverpool Royal Infirmary. The Congress dinner will be held at the Midland Adelphi Hotel on the evening of June 30th.

LIVERPOOL STANLEY HOSPITAL.

The annual meeting of the Liverpool Stanley Hospital took place on May 22nd, and, as in the case of the other three general hospitals of the city, the report for the past year showed a deficit. At present the debit balance stood at £8,012; there had been a diminution in expenditure, but unfortunately the cost of maintenance was still much in excess of that incurred in pre-war years. The treasurer remarked that the absence of new subscribers who realized their responsibilities was a notable state at the present. There was a gap left by those good citizens who had supported the hospital in years past, to be filled up by the rising generation, if the voluntary system was to be maintained. The hospital was thoroughly equipped and able to meet the wants of the northern area of the city. The committee had now in hand sufficient money to enable them to provide accommodation for patients of moderate means, and this sum, amounting to £20,548, was to be devoted to the new building for the reception of patients on a contributory basis. It was pointed out that forty years ago the hospital was in sore straits financially, but was speedily relieved through the generosity of Liverpool citizens, and the committee looked forward to a similar effort by the public.

CENTRAL MIDWIVES BOARD.

The Central Midwives Board for England and Wales met on May 31st, and held a special penal meeting, followed by the ordinary monthly meeting. Sir Francis Champneys presided. Seven midwives were cited to appear, and the names of three were removed from the roll. The Board agreed to consider carefully an inquiry from the town clerk of Kensington as to whether, in view of the prevalence of ophthalmia neonatorum, a direction to midwives might be issued from the Board as to the routine application of a suitable silver preparation to the eyes of all newly born infants. The Board decided to take into consideration at its next revision of rules the following resolution received from the inspectors of midwives and teachers of practical midwifery: (1) That the period of training of pupil midwives be lengthened; (2) that midwives approved by the Central Midwives Board to teach practical midwifery possess definite qualifications besides that of holding the Central Midwives Board certificate.

Scotland.

PROFESSOR CALMETTE AT EDINBURGH.

AN address was delivered on June 7th before the members of the Medico-Chirurgical Society of Edinburgh, with Professor Sir Robert Philip in the chair, by Professor A. Calmette, of the Institut Pasteur of Paris, on "The protection of mankind against tuberculosis." He said that after he had demonstrated the specific character of the tuberculous virus and its inoculability to different animal species, Villemin, finding it difficult to transmit tuberculosis to the dog, the cat, and the sheep, was the first to raise the question of whether any animals were immune to this disease. Later, after the discovery of the tubercle bacillus by Robert Koch, it was found that almost all the mammalia could be artificially infected, but that a small number of species could contract tuberculosis spontaneously, and that some others were so highly resistant as to be immune even to artificial

inoculation. The problem might be put as follows: How to render the leucocytes and the endothelial cells of the vessels—which enclose the tubercle bacilli but are unable to digest them—how to make these cells non-sensitive to the poisons which these bacilli contain and secrete (endo- and exo-toxins), so that the organism may tolerate the presence of a number of inoffensive foreign bodies, such as particles of silica, carbon, or metallic fragments, even of considerable size. It seemed that for man, as for animals prone to tuberculosis, such as the bovines, one early and slight inoculation was desirable, provided that it was not followed by further repeated massive infections. Such slight inoculation conferred on the organism a resistance which, while not a true immunity, protected it in case of subsequent grave reinfections from a rapidly fatal form of the disease. It might be affirmed that every subject infected in childhood by a very feeble dose of bacilli was rendered less likely to contract acute miliary tuberculosis. It was very difficult to prosecute investigation in antituberculous vaccination in laboratories and in countries where bacillary infection was so widespread that a given animal could not certainly be protected from accidental contagion. That was why he had proposed the creation of a centre of research in a position as isolated as possible, preferably on the West Coast of Africa, in the great belts of forests inhabited by large anthropoid apes, especially the chimpanzee.

Presentation to Sir John Macpherson.

A presentation was made on June 6th by professional and other friends to Sir John Macpherson, M.D., in recognition of his long and eminent services devoted to the interests of the insane. He recently retired from the post of H.M. Commissioner of the General Board of Control, and is about to proceed to Sydney as professor of psychiatry. The ceremony took place in the hall of the Royal College of Physicians of Edinburgh, with Professor Sir Robert Philip, President of the College, in the chair, and Lord Polwarth, in handing a piece of plate and a cheque to Sir John Macpherson and a diamond brooch to Lady Macpherson, congratulated them on the honour which had so rightly been awarded by His Majesty. Sir John Macpherson had played an important part in lunacy administration in Scotland, and his friends wished him a very happy time in Sydney. In returning thanks Sir John Macpherson said that his own connexion with Scottish lunacy began in 1883, when he became an assistant medical officer in Stirling District Asylum, and shortly afterwards he went to Morningside under the then greatest living authority, Sir Thomas Clouston, whose memory as a master and teacher he revered. He could testify, as his predecessors had done, to the cordial relations which existed in Scotland between the medical and lay authorities concerned with the care of the insane. By the hospitalization of asylums, skilled nursing, open-air treatment, open-air work, and as great an extension of liberty as was consistent with actual safety, suffering had been relieved and life under abnormal conditions made more endurable.

Moncrieff-Arnott Chair at Edinburgh.

The appointment is announced of Dr. Edwin Bramwell, F.R.C.P. Lond. and Edin., F.R.S.Edin., to the Moncrieff-Arnott chair of clinical medicine at the University of Edinburgh, in succession to the late Professor Francis D. Boyd. Dr. Edwin Bramwell is a son of Dr. Byrom Bramwell, the distinguished Edinburgh physician, and has made his reputation chiefly in the study of diseases of the nervous system. He is physician to the Edinburgh Royal Infirmary and lecturer on clinical medicine and neurology in the university.

The Glasgow Eye Infirmary.

The writer of the article on "The medical institutions of Glasgow," published in our issue of June 3rd, desires to correct a wrong impression which is conveyed in the note on the Glasgow Eye Infirmary. That infirmary did not really begin in its present site at Berkeley Street, but had its origin on a very small scale in a street now no longer existent, near North Albion Street, which again is a street close to High Street, where the old university buildings stood. This was in 1824, and in 1835 the infirmary was removed to College Street; in 1852 the directors purchased a house in Charlotte Street, formerly the residence of David Dale, a well-known Glasgow merchant. The hospital in Berkeley Street was not opened till 1874.

Ireland.

Royal College of Surgeons in Ireland.

At a meeting of the Royal College of Surgeons in Ireland on June 8th for the election of President, Secretary, and Council for the ensuing year, the following were elected:—President: Sir William I. de Courcy Wheeler. Vice-President: R. Charles B. Maunsell. Secretary: Sir Lambert H. Ormsby. Council: John B. Story, Sir Thomas Myles, Sir Arthur Chance, Sir Lambert H. Ormsby, George M. P. Murray, R. Bolton McCausland, Sir F. Conway Dwyer, Sir Robert H. Woods, Richard Lane-Joynt, Sir William Taylor, Thomas E. Gordon, Alexander J. Blayney, Trevor N. Smith, Sir C. Arthur K. Ball, Major-General R. H. S. Sawyer, Louis A. Byrne, Andrew Fullerton, Seton Pringle, and Edward Sheridan.

Sir William I. de Courcy Wheeler is a son of the late Surgeon Wheeler of Merrion Square, Dublin, and Robertstown, co. Kildare, a former President of the College. He has been a member of the Council of the College for the past seventeen years, and acted as President during the illness of the late Mr. E. H. Taylor. He was created a knight in 1919 for his services during the war. He has been visiting surgeon to Mercer's Hospital for many years, and represents Ireland on the editorial staff of the *Medical Annual* and of the American journal, *Surgery, Gynecology, and Obstetrics*, and is also a member of the editorial staff of the *British Journal of Surgery*, under the chairmanship of Sir Berkeley Moynihan. He is acting as one of the secretaries in connexion with the International Congress of Surgery to be held in London in 1923.

Sir William Wheeler is the author of a textbook on operative surgery, which has reached a fourth edition. He graduated in Trinity College with a moderatorship. For several years he was a demonstrator of anatomy in the School of Physic, and acted for a short time as assistant to the late Professor D. J. Cunningham. He is consulting surgeon to the Blackrock Orthopaedic Hospital, for the foundation of which he is largely responsible, and he presides over the City of Dublin Nursing Institution, which has played a conspicuous part in advancing the interests of Irish nurses. He married the Hon. Elsie, eldest daughter of Lord Shaw of Dunfermline, who is at present in Ireland acting as Chairman of the Reparations Commission.

Ulster Medical Society.

The annual general meeting was held in the Medical Institute, Belfast, on May 25th; the President, Dr. Robert Hall, occupied the chair. The annual report of council, the honorary librarian's report, and the honorary treasurer's statement of accounts, were submitted and approved of. The deficit shown in last year's accounts of £150 had been reduced to £102, although the society's work had in no way fallen off. Much regret was expressed at the necessity of having a voluntary extra-subscription fund and of asking contributors to the society's proceedings to pay in part the expenses of publication in the *Transactions*, and hearty thanks were given to those who had thus aided. It was decided to carry out the pressing repairs to the building which had been required by the trustees. The following officers were elected for the ensuing session 1922–23: President, R. J. Johnstone, M.B., F.R.C.S.Eng., M.P.; Vice-Presidents, Dr. J. T. Creery (Coleraine) and Dr. V. G. L. Fielden (Belfast); honorary treasurer, Dr. S. I. Turkington; honorary librarian, Dr. W. L. Storey; honorary secretary, Dr. Robert Marshall, F.R.C.P.I.; honorary editing secretary, Mr. G. R. B. Purce, M.Ch., F.R.C.S.Edin. Council: Dr. H. L. McKisack, F.R.C.P., Dr. Jas. Colville, Dr. Maitland Beath, Dr. W. W. D. Thomson, Dr. Foster Coates, Dr. Boyd Campbell.

THE Royal Northern Hospital has received £500 from the executors of the late Miss Amy Hill (who was associated with the institution for forty-four years), £1,050 to endow a "Frederick Brazil" bed from the executors of the late Mr. Frederick Brazil, and £1,000 from the executors of the late Mr. Joseph Grisby Spencer.

THE late Mr. James Templeton of Glasgow and Dunblane has by his will bequeathed £2,500 each to the Western Infirmary, Glasgow, the Victoria Infirmary, Glasgow, the Royal Hospital for Sick Children, Glasgow, and the Western Infirmary, Glasgow, and £1,000 to the Medical Missionary Society, Glasgow.

Correspondence.

THE INTERSTITIAL GLAND AND SEX PROBLEMS.

SIR,—Dr. Leonard Williams's paper on the interstitial gland, published in the JOURNAL of May 27th, was most interesting. If his suppositions are correct, and it is possible for a male child to grow up morphologically male but "interstitially" largely female, then, as he suggests, homosexuality in such an individual ceases to be a felony, and must be regarded as normal *per se*. But if this latter suggestion comes to be accepted, we may look for some striking defences in cases of unnatural crime.

Referring to sex causation, while one is keenly alive to the fact that most of our knowledge of this fascinating subject is founded on theory, some of Dr. Williams's statements, and at least one of the conclusions he arrives at, are scarcely in accordance with the results obtained by recent research. For instance, he says:

> For several weeks the embryo is neuter, and we are to suppose that the male element and the female contained therein are striving for mastery the one over the other.

The rather sweeping statement that the "embryo is neuter" must strike somewhat strangely on the ears of most embryologists. Rumley Dawson stated in his paper in the Obstetrical Society's *Transactions*,[1] that the human ova have their sex already definitely fixed prior even to their dehiscence. In the posthumous edition of his book[2] he wrote:

> The male ova arise from the right ovary and the female from the left ovary, so that the female infant is born with her primitive ova already either male or female, and thus the causation of sex comes to be dependent on the woman alone.

Whitridge Williams (Baltimore)[3] admits that until very recently we were almost absolutely ignorant concerning the causation of sex, and that it was generally believed that it did not become established until some time after fertilization. He points out, however, that recent investigations clearly show that this is not the case, but that the sex is determined in the germ cells either primarily or immediately after their union, so that it has become immutable by the time segmentation of the ovum begins. As the youngest human ovum yet recorded—the Teacher-Bryce ovum—is only about 13 days old and exhibits the trophoblast stage, it follows that "neutrality of sex," if it exists at all, cannot be a matter of weeks.

Then again, in regard to the interstitial gland in the female, if, by this term, one is to assume those hypertrophied theca cells which develop around the periphery of follicles undergoing atresia, one can dismiss it as being of but secondary importance as regards an internal secretion, as according to Williams of Baltimore,[3] clinical observation bears out Fränkel's statement that the internal secretion is elaborated in the corpus luteum. If we are to accept Rumley Dawson's sex theory at all—and, so far as I have been able to ascertain, no later investigations have actually disproved it—then, instead of administering male interstitial gland, as Dr. Williams suggests, in cases of deficient "maleness," one would require to administer corpus luteum extracted from the right or male ovary, and from the left or female ovary in cases of deficiency in "femaleness."—I am, etc.,

R. DOUGLAS HOWAT, L.R.C.P. and S.Edin.

Denholm, Hawick, May 30th.

SIR,—In the otherwise illuminating and suggestive paper by Dr. Leonard Williams published in the BRITISH MEDICAL JOURNAL of May 27th there is an expression of opinion with which medical men as a whole will, I am confident, disagree, and a statement to which, I am equally confident, they will take the severest exception.

The author quite rightly maintains that the attitude adopted by a civilized community towards homosexuality is of social importance. Now the general attitude of the British community towards such practices is one of utter detestation. Dr. Williams proceeds to admonish society on this—to him—incorrect attitude, and to warn it that, if it is to merit the qualification "civilized," it must not place too many legal, moral, and conventional obstacles in the path of those who are inclined in the direction of this practice. He says:

> I am entirely of the opinion . . . that the present law on the subject requires revision. Regarded in the light of pure physiology, it is no more reasonable to punish a man for being homosexual than it would be to punish him for having red hair. Both of these things are burdens cast upon him by forces over which he has no sort of control, nor can he alter or modify them by any effort of the will.

As strict matter of fact a man is not punished for being a homosexual. Indeed, if we are to believe some of the extravagancies of Freud and Jung, to say nothing of the unutterable twaddle of certain of their disciples—the neo-psycho-analysts—we are all in the same position in relation to homosexuality, and punishment is therefore out of consideration. Legal punishment is only inflicted on an individual who is proved to have committed an act of homosexuality, a totally different thing, since in the one case we are dealing with a state or condition, in the other with an act, or rather acts. But Dr. Williams would have the law on the subject relaxed, and the community "educated" up to a lofty indifference to a disgusting and opprobrious vice—a vice that is after all as old as the ancient Syrian town on the northern slopes of the Dead Sea from which it takes its name.

While not for a moment admitting the validity of Dr. Williams's statement as quoted above, I would ask the question, Why should society enact its rules solely "in the light of pure physiology"? It could equally be pleaded of the man who, on a hot perspiring day in August, strolled down the Strand in his birthday suit, or who obeyed the calls of nature in the middle of the public thoroughfare, that, "regarded in the light of pure physiology," it would be unreasonable to restrain him. And whither does such argument lead? To be consistent, Dr. Williams will have to admit that individuals addicted to lesbianism, tribadism, sapphism, masochism, and all other "beastly isms" of the sexual pervert no more merit punishment than do the possessors of red hair! Nor should he exclude thieves and cut-throats. Fortunately, however, society has not so evolved and framed its laws of conduct. While making all due provision for physiological and, it should be added, pathological factors, it recognizes these only in conjunction with many other equally important factors, and it insists that such eccentrics should be clapped either into prison or madhouse. It does so with three objects: to cure the individual of his anti-social proclivities, to deter others from like conduct, and to rid itself of that which is a source of annoyance and disgust.

Dr. Williams reminds us that it is not so very long since people were tortured for being insane. He might, with equal disregard for relevancy, have called attention to the fact that in those good old times epileptics were deified.

Although a determinist I disagree entirely with the statement that homosexual acts, like red hair, are "burdens cast upon" the individual "by forces over which he has no sort of control, nor can he alter or modify them by any effort of the will." Each one of us is undoubtedly within the clutch of circumstance, and our acts are but links in an infinite and inexorable cause-effect chain. Nevertheless, education, law, environment, etc., all have their place in that chain, and consequently our acts are, in their relation to other parts of the chain, very materially modifiable. Acts are determined by the strongest desire at the moment of action, and a good society will see to it that education, environment, reward, and punishment, subordinate the primal urge to evil to a stronger desire to refrain from evil.

It may be stated with tolerable certainty that the overwhelming majority of homosexual acts are perpetrated by individuals who have acquired the practice—that is to say, in whom the tendency towards the vice was not inborn or germinal. Such cases resulted from faulty nurture, not faulty nature, and therefore were preventable. It may be an ugly thing to say in cold blood, but none the less is it true, that in the present state of society, if the law in relation to homosexuality were to be relaxed, the vice would increase with as great promptitude and certitude as would hooliganism in a great city if all the physical forces of law and order were to be removed.

Dr. Williams thinks it "high time that the members of our profession expressed strong and clear views on this question." I cordially agree and sincerely hope that a vigorous response to his suggestion will be forthcoming. A lenient attitude towards perpetrators of homosexual acts constitutes a grave social danger.—I am, etc.,

C. MARSH BEADNELL, Surgeon Rear-Admiral, R.N.

Llandinam, N. Wales, May 29th.

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[1] Obstetrical Society's *Transactions* for 1900, vol. xlii, p. 356.
[2] E. Rumley Dawson: *The Causation of Sex in Man*, 1921.
[3] Whitridge Williams: *Obstetrics*, pp. 169 and 64 respectively.

FATAL BOTULISM.

SIR,—In the interesting annotation (June 3rd, p. 893) attention is drawn to the considerable number of outbreaks, reported as "botulism," that have been observed during the last few years in the United States.

It is perhaps deserving of emphasis that in respect of only a very small minority of these outbreaks of associated cases of acute nervous disease has there been any show of attempt to demonstrate, by bacteriological or serological methods, the connexion of the cases with *B. botulinus*. And I do not know that in connexion with any one such attempt has the demonstration been so conducted as to satisfy any competent bacteriologist of its sufficiency. Moreover, there do not appear to have been lately conducted any fresh experiments tending to show that the bacillus called *botulinus* is really responsible for outbreaks of the kind reported as due to "botulism." Again, no definite clinical criterion appears to be established that distinguishes all cases called "botulism" from all others called "encephalitis lethargica," though the former name is reserved for cases occurring in association—usually commensal—and the latter for cases that are apparently dissociated from others in their origins. This, however, is a matter of epidemiology and not of *clinical* importance. But as the Derby outbreak of August, 1919, clearly shows (Annual Report of the C.M.O., 1919–20, Ministry of Health, pp. 357 et seq.), commensal association is quite compatible with the diagnosis of encephalitis lethargica.

There are many interesting points that call for discussion, but the object of this letter is to point out the need for a revision, at the hands of critical pathologists and bacteriologists, of the statements made and copied from one book to another concerning botulism during recent years. I need hardly insist that Dickson's demonstration (Monograph No. 8, Rockefeller Institute, 1918) of the fact that the bacillus called *botulinus* will grow on canned tomatoes and beans does not prove that, in a country where canned fruits and vegetables are everywhere consumed, certain types of illness are due to the toxic products of this organism. Nor does Marinesco's investigation of the brains of animals dying or killed after inoculation with this organism or its products help us with regard to the pathology of human cases called "botulism," but of no proven association with the bacillus. In fact, the subject is as obscure as when Grisolle wrote, eighty years or more ago, that we did not then possess any satisfactory description of the effects characteristic of this type of poisoning. All the descriptions, he said, are incomplete and give us only a very slight idea of the physiognomy of the disease and of the nature of the changes produced by it.

One epidemiological fallacy has dogged the history of botulism ever since Kerner first described it one hundred years ago—the fallacy that commensality in relation to an acute outbreak of disease necessarily implies food poisoning. But when, during the Christmas holidays, measles breaks out amongst the participants in a children's party, we do not implicate cakes and jellies.—I am, etc.,

London, W., June 3rd. F. G. CROOKSHANK.

A PULMONARY SIGN IN ACUTE INFECTIONS OF THE BILIARY TRACT.

SIR,—Mr. Wilkie, in the BRITISH MEDICAL JOURNAL of June 10th (p. 908), draws timely attention to the relationship of physical signs at the base of the right lung to acute lesions of the upper abdomen. He points out our familiarity with the cases which have referred pain in the abdomen from a lesion above the diaphragm, but warns us that the presence of crepitations and other physical signs at the base of the right lung may be in favour of, and not against, an abdominal diagnosis.

The wonder is that pulmonary signs are not more regularly present in patients with an "acute upper abdomen." It is a common experience after operations in "cold" cases, such as gastro-enterostomy, cholecystectomy, etc., to be told by the house-surgeon that the case is "a bit chesty." For the first few days there may be profuse expectoration of the broncho-pneumonic type. In the great majority of these cases, the chest symptoms disappear in a few days after an aperient and the first successful evacuation of the bowels—in other words, when the tension in the abdomen is relieved. The condition is vaguely spoken of as ether bronchitis and the onus is placed on the shoulders of the anaesthetist. Criticism is silent when a local anaesthetic is employed, and rather complicated explanations are forthcoming when the operator is accustomed to employ anaesthesia administered per rectum. The fact is that these cases are often due to oedema of the lung, the result of impaired movement of the diaphragm, reflexly as is suggested by Mr. Wilkie, "from irritation of the sensory fibres of the phrenic nerve," or more likely from the mechanical difficulty of diaphragmatic excursions against rigid recti muscles combined with the general effort of the patient to prevent movement in the recently wounded area.

When transient oedema of the lungs occurs so often after high laparotomies in chronic cases, its presence in cases of the acute upper abdomen before operation is not surprising. The causal factors are the same whether mechanical (as I have been in the habit of teaching), reflex, or infective. In 1916 Murphy drew attention to the high mortality from oedema of the lung after closure of large umbilical hernia due to "a deficiency in the action of the diaphragm muscle (the piston of respiration) in breathing."

My only doubt, after reading Mr. Wilkie's instructive paper, is in regard to the limitation of these pulmonary signs to cases with infections of the biliary tract.—I am, etc.,

Dublin, June 12th. W. DE C. WHEELER.

THE OUTLOOK IN TROPICAL HYGIENE.

SIR,—In your issue of May 20th Colonel A. Balfour, C.B., makes the following statement:

"There was a great need of establishing a special course of instruction in this country for sanitary inspectors destined for the colonies. *So far as I am aware, no diploma in sanitary science as applied to the tropics yet exists for sanitary inspectors.* All that has been done in this direction is represented by the certificate granted by the Royal Sanitary Institute to sanitary inspectors who have qualified in the examination on tropical sanitation which has been recently instituted." [Italics not in original.]

I concluded therefrom that he was not aware of conditions which had existed for nearly a generation in the Madras Presidency, and more recently in other parts of India; and that he contemplated the provision of a particular course of instruction in tropical hygiene under the Royal Sanitary Institute, in support of its recently evolved certificate. In my letter on the subject (BRITISH MEDICAL JOURNAL, June 10th, p. 935), guarded by the conditional phrase "if that be so," I suggested that modification of the inappropriate method pursued by the Royal Sanitary Institute in bestowing its seal upon certificates of men educated [and examined] locally in the tropics, was a very desirable first step in the matter.

Colonel Balfour has now favoured me with a copy of his paper (not yet published by the Royal Sanitary Institute), in which it is shown that he does not look to the Royal Sanitary Institute for the course of instruction he desires, but to the future Imperial Institute of Hygiene. He regards the Royal Sanitary Institute in this connexion merely as an examining body.

A scheme erroneously described at its initiation is apt to be inhibited in development by doubts incident to incorrect information at disposal of otherwise willing supporters. Hence, as I believe all sanitary workers in the tropics would wish success for Colonel Balfour's scheme in its broad aspects, I submit this amendment of my letter above referred to.—I am, etc.,

London, N.W., June 12th. W. G. KING, Colonel I.M.S.(ret.).

EXPECTANT TREATMENT OF MEASLES AND INFLUENZA.

SIR,—As no one else has commented on the subject, may I add my voice to those of Major Reginald F. E. Austin (June 3rd, p. 901) and Dr. Thos. Carruthers (May 13th, p. 786), for I believe their contention to be worthy of every support.

I, too, for many years have been preaching the starvation and cold-water treatment of measles and other acute febrile conditions, and am satisfied as to the results. A few days' starvation from food does no harm, and drinks of water do every good.

There is a remarkable dread of cold water among the public. When told to give a feverish child drinks of water the mother almost invariably asks incredulously, "What? *Cold* water, doctor?" and is sometimes with difficulty persuaded. But I venture to say that warm milk, to a hot, feverish, thirsty child, is a revolting drink to offer.

I shall never forget a case here during an epidemic of what was popularly called "black measles," where three out of five children in one cottage died within a week. Three of them were in bed in one room, and on my visit one day as medical officer of health I was told with dismay that one of them, aged about 2 and just able to walk, had got up in his

delirium, staggered across the room to the washstand, and had wellnigh emptied the water-bottle. I at once said, "Well, it has probably saved his life," as indeed proved to be the case. He was asleep and already perspiring freely when I saw him. Thin barley water, made as tea is made, simply by pouring boiling water over a good handful of pearl barley and infusing till cold, is about the best of the drinks. It is hardly distinguishable from plain water when poured off, but contains the albumin and salts of the barley without the starch. It can be flavoured with thin lemon peel if liked. A large teapot or jugful of this, if put down overnight, is ready for the day's use each morning.—I am, etc.,

Bromsgrove, Worcs., June 8th. H. CAMERON KIDD.

ENGLAND AND VENEREAL DISEASE.

SIR,—Your review of my little book *Safe Marriage*, in the BRITISH MEDICAL JOURNAL of June 10th, is more than fair; it is very generous. But when you say, "Miss Ettie Rout is rather contemptuous of the England of to-day, and more than doubtful of England's future," you rather misunderstand what I wrote. I certainly believe that *on the average* the Anzacs are finer than the English in many ways, but that is only natural. Australasia was founded by highly selected British stock in the first instance—discoverers, explorers, sailors, soldiers, pioneers, and adventurers, men such as those who in our times make up the polar expeditionary parties. Second followed men of high character, noble political ideals, and great national vision, their inspiration to found a Greater Britain beyond the seas. Third, we had men and women of high education, great integrity, and sustained courage, many of them connected with different Church settlement schemes; they went out in sailing ships which took months to arrive, and they were indeed fortunate if they could get a reply to a letter within twelve months. Fourth, in Australia we had the convicts, many of whom were not criminals at all, merely rebels against absurd social conventions and mischievous laws. We got the rebels—you kept the slaves! Fifth, with the discovery of gold came the rush of miners and adventurers of all sorts. That was the beginning of the Anzacs. But there were always and still are far more men than women in Australasia; therefore sexual selection operated favourably in this way: that women were able to exercise a fairly wide choice as to the kind of man they wished to make the father of their children. In England, with its two million surplus women, women have not the same choice. The environment of the Anzacs is also much better on the average than the masses of the people are able to secure in England. We are better fed, better clad, better housed; we have a better climate, more open-air life, and we are geographically isolated from the diseased countries of the Old World.

All this is not to say that England has no men equal to the Anzacs. Of course she has! In the learned professions particularly she has many whom we gladly admit to be our superiors, and from whom we gladly learn. Generally speaking, you have more of the graces and vices of life than we have, and we have more of the crudities and virtues. We unite in feeling that the venereal problem constitutes the gravest affront to the pride and state of our empire. But our method of tackling it is—*to face the truth;* yours is—*to deny the facts.* Therefore I am optimistic so far as the Anzacs are concerned; pessimistic so far as the English are concerned. The main grounds for pessimism seem to me these:

1. During the war some millions of English men and women became infected with venereal disease, and many of them are still uncured.
2. From 1919 to 1922 large numbers of Englishmen have been abroad as soldiers in venereally dangerous areas, inadequately protected by disinfective measures, and within that period the number of fresh infections is wellnigh equal to the number of soldiers abroad!
3. During the same period some millions of men and women have been wholly or partially unemployed continuously, forming an idle or floating population, often quite unstable and more or less nomadic, and gradually becoming demoralized.
4. The surplus women have now grown to two millions, and by pressure of their numbers and lack of occupation they tend to lower the prestige of woman in England, arouse sex hostility, and over-feminize the national mind; and, in addition, large numbers of girls acquired loose habits during the war which they are unable or unwilling to abandon now.
5. London is the great meeting place and highway of the world, and residents and visitors are at perfect liberty to take any liberty they like with the sexual health of each other.
6. Every effort to induce the people to be clean sexually and to limit the number of their offspring is bitterly opposed; thus the national stock becomes progressively degraded by the fertility of the unfit who stay at home and the emigration of the fit who go abroad. And every day adds another thousand persons to the swarming population of England!

—I am, etc., ETTIE A. ROUT.

London, W., June 10th.

"ALASTRIM" OR "PARASMALLPOX."

SIR,—There are one or two points in Dr. Jervis's letter in the JOURNAL of May 27th requiring a reply from me.

Firstly, he suggests that, in my letter appearing in your issue of May 13th, after having stated in the second paragraph that alastrim is a separate entity, I contradict myself by refuting this in the last paragraph. How Dr. Jervis can possibly read such a meaning into the last paragraph of the letter I am at a loss to understand. His interpretation of the passage is so interesting that, with your permission, I will repeat the paragraph, which says:

"If 'alastrim' (synonyms: amaas, milk-pox, Kaffir-pox, etc.) is a disease separate and distinct from small-pox, it should have a distinctive name. If 'alastrim' or 'amaas' are unsuitable names why not call it 'parasmallpox'? *No useful purpose can be served by pretending that it is small-pox.** It might be suggested that to call it small-pox would induce people in the areas where the disease is epidemic to submit to vaccination. That subterfuge might, however, defeat its own object—for the antivaccinators would naturally retort, 'If small-pox has lost its power to kill and disfigure its victims, why trouble getting vaccinated against it?'"

The second point in Dr. Jervis's letter requiring attention is his reference to the confusion of issues. He says:

"This is not a time for confusing issues; rather is it a time for clear thought and direct action, because knocking at the nation's door at this very moment is what may prove to be one of the most serious epidemics of small-pox which has ever assailed the population of these isles."

The issue raised in Dr. Jervis's first letter, published on April 29th, was one of nomenclature. He appealed earnestly for the utter banishment of the silly word "alastrim." I suggested the word "parasmallpox," which naturally conveys to any medical mind the meaning "an acute specific infectious disease resembling small-pox." If "alastrim" is silly, "parasmallpox" is sensible. Some name is required for a disease, which every person who has had opportunities of studying it must admit is not classical small-pox, in order to facilitate discussion. Names or words are our only means of expressing ourselves.

He now appeals, dramatically, not to say picturesquely, for "clear thought" and "direct action." Can Dr. Jervis say what issue has been or is being confused and by whom?—I am, etc.,

R. P. GARROW,
Chesterfield, June 7th. Medical Officer of Health.

BILHARZIA DISEASE IN SOUTH AFRICA.

SIR,—The presence in Natal of schoolboys who have contracted disease through bathing in the Durban suburbs, and show in their urine the ova of *Schistosomum haematobium*, *S. mansoni*, and ova resembling those of *S. bovis*, emphasizes the need to differentiate the various schistosomes which in their cercarial stage infest the fresh-water snails in South Africa.

One can produce at will the cercariae of *S. haematobium* in *Physopsis africana* which has been bred free from other sources of possible infection, and efforts are being made to secure the cercariae of the rarer schistosomes, whilst other efforts are being made to secure their adult forms.

Bilharzia disease has long been known to exist in the Cape Province, and at one time was very common at Kingwilliamstown and Uitenhage. As the disease also occurs amongst the schoolboys who bathe in Baaken's Spruit at Port Elizabeth, I visited this river in October last and found numerous examples of *Physopsis africana* attached to the rocks, waterlily leaves, and water weeds. Previous collections of this snail from Port Elizabeth failed to show schistosome infestation, but on this occasion it was found to be heavily infested with schistosomes resembling those of *Schistosomum haematobium* and diagnosed by Dr. E. C. Faust as such.

I understand that this is the first occasion that the cercaria of *Schistosomum haematobium* has been identified and the intermediary host responsible determined with certainty in the Cape Province.—I am, etc.,

F. G. CAWSTON, M.D.Cantab.,
Durban, Natal, May 8th. First Streatfeild Research Scholar.

* This sentence in the original letter did not appear in italics.

THE CASE OF MR. F. W. AXHAM.

SIR,—In your issue of June 10th Dr. C. O. Hawthorne opens a delicate question which perhaps should be best left alone. It is hardly credible that the honour recently conferred on Mr. H. A. Barker is due—even in part—to the efforts of leading members of the medical profession. If so, it would be interesting to know who they are.

The cases of Sir H. A. Barker and Mr. F. W. Axham are on two different planes. According to the announcement of the knighthood to Mr. H. A. Barker in the *Daily Mail* it was stated that "when quite a child he showed great ability for manipulative surgery." This, if true, indicates that Sir Herbert's ability is congenital, innate, or instinctive in origin—at least, I have never heard of a school where the children were taught manipulative surgery.

In the case of Mr. F. W. Axham his skill in anaesthetics was due to the training he received under the educational supervision of the General Medical Council, and this skill had to be practised in accordance with the restrictions and traditions maintained by that body. If these restrictions and traditions are broken, as they were by Mr. F. W. Axham, the General Medical Council had no option but to act as they did. To reconsider that decision on the ground of the knighthood to Mr. H. A. Barker would be illogical, but there is no reason why the anaesthetist should not be honoured by a decoration lesser than that conferred on the operator.—I am, etc.,

Warrington, June 11th. J. S. MANSON.

SIR,—Dr. C. O. Hawthorne's letter is surprising. He seems to argue that because the Government or the people, with the connivance of some medical men, has decided to confer the honour of knighthood on an unqualified practitioner, therefore the General Medical Council and the profession at large should regard the practitioner as duly qualified, not only henceforth but retrospectively too.

It is rather disingenuous of Dr. Hawthorne to use the terms "by medical efforts" and "by a medical verdict," as though each equally represented the official action or even the judgement and desire of the medical profession. He makes "no pretence to estimate the value of the work," but in the next sentence implies quite definitely that "restriction" of the worker's "activities" would have been a misfortune in his opinion.

It is not a question of "one being exalted and the other contemned" *by the same people or body*, as he implies, and there is no opening to obvious reproach so far as the profession at large is concerned.—I am, etc.,

Swinton, Manchester, June 12th. J. PRICE WILLIAMS.

FIRST REPORT OF THE MINERS' NYSTAGMUS COMMITTEE.

SIR,—In your issue of June 10th (p. 932) I should have pointed out that the curious example of the committee's reasoning was a quotation immediately prefaced by the words "An illustration given by Trotter (66, p. 24) will explain the great importance of this reflecting power."

It is clear, then, that the committee give their sanction to the quoted passage.—I am, etc.,

Newcastle-upon-Tyne, June 11th. ARCHD. STANLEY PERCIVAL.

MACHINE FOR CRUSHING GERMS.

SIR,—In the BRITISH MEDICAL JOURNAL of June 3rd, 1922 (p. 902), Professor Tanner Hewlett states that we are apparently unaware that several machines have been devised for disintegrating bacterial cells.

We would like to point out that we are well aware of the existence of these machines, since we actually possess in our laboratory the ball-mill devised by Mr. J. E. Barnard. We found this machine so unsatisfactory that we discarded it as useless, and its motor is now used for driving other apparatus. One of its many faults is that the grinding cup is made of phosphor bronze, while the balls are made of steel. The result is that the ground germ material becomes quite black, due to the admixture of bronze dust. These machines are only capable of grinding germs in a more or less dried or frozen condition, and there is no doubt that an apparatus which will smash germs in a clean watery suspension is much to be desired.

The new machine which we possess is capable of cutting up yeast cells, and we feel that with further improvements the actual bursting of bacilli will be accomplished.—We are, etc.,

DAVID AND ROBERT THOMSON.

London, W.C.2, June 8th.

DETOXICATED VACCINES.

SIR,—I remove the toxins from my vaccines before sterilizing them because I can see no point in retaining broken inert products in a vaccine when it is possible to remove them.

I am not concerned to deny that fractions of an organism may produce antibodies to themselves when injected into an animal, but I contend that such results do not of themselves prove that the animal treated is thereby immune against attack by the whole organism.

I have never said that heat alone is sufficient to detoxicate a vaccine. I rely upon washing and the action of nascent oxygen. The autoclave is used to obtain rapid and efficient sterilization, and I showed conclusively in my paper that after the washing and the oxygen had done their work heat did not affect the vaccine either in its toxicity or its curative power. I published a large number of cases in support of that statement. So far from the autoclaved vaccine being inferior to the unheated vaccine, it actually showed slightly better results. Dr. Thomson may believe that a temperature of 120° C. destroys the specific antigenic power of any protein, but it would appear that his own quotation of Vaughan's work in the previous paragraph of his letter entitles one to be somewhat doubtful of the precise value of his belief. The fact that my results with an autoclaved vaccine are flatly opposed to the theory on the subject is one of those regrettable instances in which proved clinical facts happen to be at variance with what a theory states they ought to be.

I am aware that we do not test for syphilitic antibodies in the Wassermann reaction. I am obliged for the advice tendered, and, it is almost unnecessary to add, will treat it appropriately. Meanwhile I still await an explanation of how a germ can remain "unaltered" after being washed, treated with nascent oxygen for twenty-four hours, and finally autoclaved.—I am, etc.,

Manchester, June 12th. C. E. JENKINS.

The Services.

AUXILIARY R.A.M.C. FUNDS.

THE Auxiliary Royal Army Medical Corps Funds are divided into two branches: (*a*) Officers' Benevolent Branch, and (*b*) Relief Branch. Up to the end of 1921 the Benevolent Branch has assisted 42 widows and 102 orphans of officers in the Auxiliary R.A.M.C.; the total amount awarded was £5,788. The Relief Branch has assisted 116 widows or totally disabled men of rank and file of the Auxiliary R.A.M.C., and 299 children, nearly all orphans; the total amount awarded was £7,819. As in both cases the majority of the children are young, and the primary object of the Funds is to assist in education, the Funds' work will not be completed for several years. The Committee hopes to be able to maintain these grants and will be grateful for continued help. The President is Lieut.-General Sir John Goodwin, D.G.A.M.S.; the Hon. Treasurer is Colonel C. Mansell Moullin, R.A.M.C.(T.); and the Hon. Secretary Colonel Sir W. Hale-White, R.A.M.C.(T). The office is at 11, Chandos Street, Cavendish Square, London, W.1.

The annual meeting of the Funds was recently held at 11, Chandos Street. In the absence of the President, Colonel William Collier, a Vice-President, occupied the chair. Since the last annual meeting £1,778 has been granted to help the maintenance of the orphans of 36 officers in the Auxiliary R.A.M.C. who lost their lives as a result of the war; and £2,471 has been granted in the same way to the widows and orphans of 96 of the rank and file, making a total of £4,294 granted, and 135 cases relieved in a single year. As frequently several children of a single case were relieved, the total number of persons relieved was considerable.

DEATHS IN THE SERVICES.

COLONEL PATRICK ALEXANDER WEIR, Bengal Medical Service (retired), died at Farnham Common, Bucks, on April 20th. He was born on June 4th, 1851, the son of the Rev. James Weir of Drainie, Elgin, and educated at Aberdeen, where he graduated M.B. and C.M. with first-class honours in 1874, and at Guy's Hospital. He entered the I.M.S. as surgeon in September, 1875, became colonel in 1905, and after five years' tour of office as Inspector-General of Civil Hospitals in the Central Provinces, retired in October, 1910. He served in the Afghan war of 1878-80, receiving the medal. Along with the late Lieut.-Colonel J. Crofts, I.M.S., he was the author of *A Medico-topographical Account of Kohak and Jhalawar*.

Obituary.

W. H. R. RIVERS, M.D., D.Sc., F.R.S.

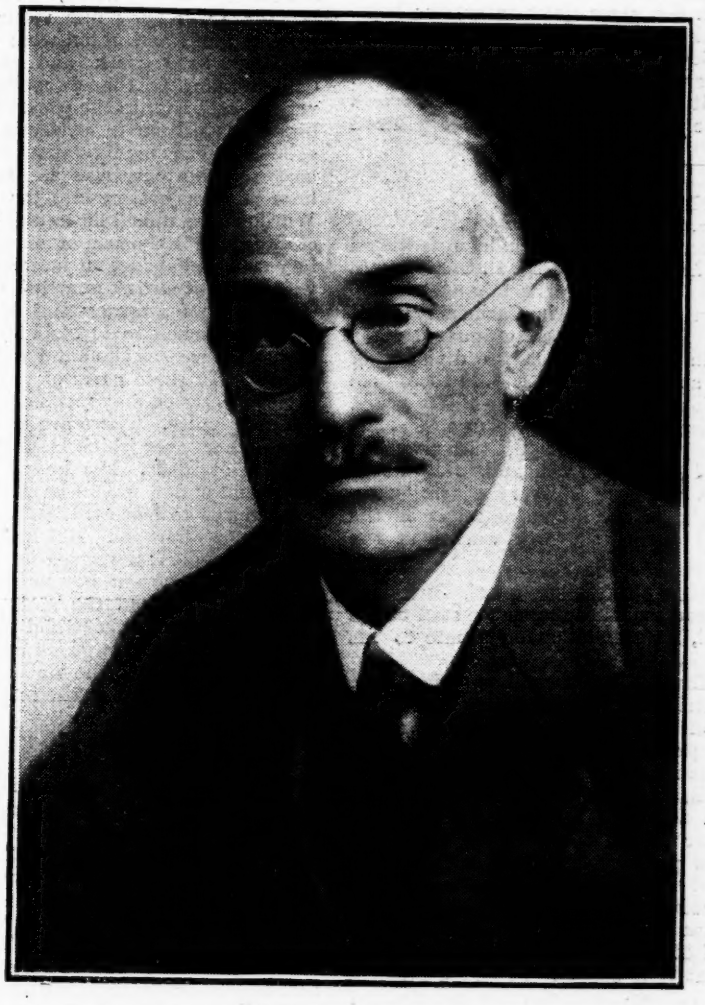
AN APPRECIATION.

BY HENRY HEAD, M.D., F.R.S.

ON the evening of June 4th we were horrified to learn that Dr. Rivers had died after a few hours' illness. No mere recital of the events of his life, of the posts he held, or the honours he received from learned societies, can give any idea of the profound loss caused by his death, and no single person is capable of doing justice to his varied activities. For the range of his work included the functions of the nervous system, psychology in its widest sense, and anthropology; and these three great interests of his life he treated as different aspects of the same problem—the biological reaction of man to his environment.

We first met in 1891, when he was house-physician at the National Hospital, Queen Square. I had worked for some years with Ewald Hering, and Rivers absorbed with avidity the views on colour vision and the nature of vital processes in living matter expressed in the writings of this physiologist of genius. When the unexpected invitation came to lecture in Cambridge on the functions of the sense organs, he was already deeply read in the subject; but, with his usual thoroughness, he prepared himself for his new duties by some months spent abroad in the study of experimental psychology.

As university lecturer on this subject he was persuaded to accompany the Cambridge Anthropological Expedition to the Torres Strait in order to supervise this aspect of the work. At that time his interest was purely psychological; but during the course of observations on the condition of colour vision he constructed a genealogical table to show the exact relationship of the inhabitants forming a small closed community on a remote island. This yielded evidence of unexpected ethnological value, and led him to develop his genealogical method of studying kinship as a key to social organization. He applied to other communities this precise means of recording the results obtained by field work, and in 1902 spent some time amongst the Todas, a primitive Indian people living in the Nilgiri Hills. During his absence he was elected to a Fellowship at St. John's College and, for the first time in his life, his material position was secure.



Photograph by] DR. W. H. R. RIVERS. *[Elliott and Fry, London.*

He had always been interested in the physiological consequences of nerve division. When, therefore, in 1903, we determined to bring clinical results to an experimental test by dividing the radial and external cutaneous nerves in my arm, he undertook the rôle of examiner. Throughout the next five years of precise and untiring observations he began to consider the structure and functions of the nervous system from an evolutionary standpoint.

At the close of this work in 1908, he made an expedition to Melanesia, which resulted in *The History of Melanesian Society*. This was a bold attempt to reconstruct the story of successive immigrations from the coexistence amongst a single people of incompatible forms of culture and social organization. Here he showed that his powers of accurate ethnological field work were associated with remarkable capacity for constructive generalization.

From this time his interests became centred more definitely in anthropology, and at the outbreak of war he was again in Melanesia. But on his return to England he threw himself into medical work. In July, 1915, he became one of the brilliant band of workers who at that time made Maghull the centre for the study of abnormal psychology; here his knowledge of organic nervous disease stood him in good stead. Rather more than a year later he was transferred to the Craiglockhart War Hospital, and it was here, amongst officers suffering from functional neuroses, that he revealed his remarkable power of gaining the confidence of young men. In earlier days at Cambridge his general health had been poor, and, in order to accomplish the large amount of work completed during this period, he was compelled to live somewhat the life of a recluse. But his vivid interest in the personality of each individual patient under his care and his determination to give help developed a latent capacity to influence deeply those with whom he was brought into contact. At the end of 1917 he was transferred to the Royal Air Force as consulting psychologist, and acquired a remarkable knowledge of flying, which resulted in a research on the mental aspects of military aviation.

Such varied experiences led him to consider functional nervous disorders from a general biological standpoint; he came to the conclusion that sexual factors played no essential part in the war neuroses, but that they were due to disturbance of an even more fundamental instinct—that of self-preservation. His last published work, *Instinct and the Unconscious*, was an attempt to derive these morbid mental states from the dissociated activity of instincts long held in subjection.

With his return to Cambridge in 1919 began one of the happiest and most brilliant stages of his career. He was appointed prelector in natural sciences at St. John's College; no formal teaching was required, but his enthusiasm, personal influence, and individual knowledge of the undergraduates profoundly stirred the scientific life not only of the college, but also of the university as a whole. The standard he demanded of himself made it imperative for others to keep up to a high level. He held informal meetings in his rooms for discussion of the most diverse subjects, and here he was seen at his best.

He was intensely occupied with the drama of human life, and this made him an interested auditor and a valuable counsellor in serious trouble. Triviality he abhorred. Pretentious pomposity withered in his presence, and the incompetent, however high in official rank, trembled before him. He created an atmosphere in which the insignificant could not survive. He was endlessly patient with an honest expression of personal opinion. His charity was boundless; but unsuspecting persons who expressed some mischievous view were often startled by the vehemence of the reaction they evoked from this modest man of science. With younger

men he was extraordinarily gentle, and I have often watched him wait his opportunity to drop into a discussion the exact word which brought together two disputants who had failed to understand one another. With him all conversation was constructive; he disliked barren argument or talking for effect and mastery.

He was an unusually trustworthy critic of the work of others; his opinion was sought by the most diverse persons and administrative bodies, and his verdict was given without hesitation. When he praised he carried immediate conviction, and his rare interventions in the debates of a committee of which he might happen to be a member were always effective.

His strongest characteristic was his intellectual rectitude, for he was never afraid to face the consequences of any view he might hold, and was always prepared to yield to cogent contradictory reasons. Whatever course of action he undertook was approached with the same quiet intensity; however adventurous might be his opinions, he wasted no time in tilting at windmills. The loss to science and to the university caused by his death is irreparable; for he aroused in those who came into contact with him a passionate consciousness of the significance of life and the beauty of organized knowledge.

R. C. ELSWORTH, M.D., F.R.C.S.,

Consulting Surgeon, Swansea General Hospital.

WE have, with much regret, to record the sudden death on May 27th, at his residence in Swansea, of Dr. R. C. Elsworth, in his 64th year.

Richard Cogswell Elsworth was born in Carlisle, received his medical education at Edinburgh, and graduated M.B., C.M. in 1888 and M.D. in 1901; he took the diploma of M.R.C.S.England in 1891 and that of F.R.C.S. in 1896. He had been in practice in Swansea for more than thirty years, and was surgeon, and afterwards consulting surgeon, to the Swansea Hospital. He was a member of the Swansea Division of the British Medical Association, and in 1903 contributed to our columns a paper on Freyer's operation for enlarged prostate. He held a commission as major in the R.A.M.C. (Territorial), and during the war worked at the 3rd Western General Hospital, Cardiff.

We are indebted to Dr. H. A. LATIMER, now of Tunbridge Wells but for long Dr. Elsworth's colleague on the staff of the Swansea General Hospital, for the following tribute to his memory:

By the sudden death of Dr. R. C. Elsworth, on May 27th, Swansea and a large district in South Wales have been deprived of the services of a brilliant surgeon, and many friends, among whom I am proud to number myself, are left to deplore the loss of a man who had endeared himself to them by his kindness, skill, and willing assistance in their time of need. I am led to make this personal allusion because I am left his debtor for an operation on myself, of a grave character, which he performed some years ago, and for other acts of professional friendship of great value to me.

Dr. Elsworth was educated at the University of Edinburgh, where he acted as assistant to the late Sir Thomas Fraser, F.R.S., Regius Professor of Medicine, and subsequently as a demonstrator of anatomy at that school. From Sir Thomas Fraser, who was one of my colleagues on the General Medical Council, I learned of the high appreciation he had of my friend—an appreciation which was the result of his observation of his work when under him.

The careful study which Dr. Elsworth pursued at his famous university and the opportunities it afforded him made his diagnostic skill one of distinction, and I have no doubt that his post as a demonstrator of anatomy paved his way to the singularly rapid and brilliant handicraftsmanship which marked his career as a surgeon, and led to his enjoyment of a large consulting and operating practice in the region of his adoption. This power of using his hands was exhibited in various directions—in photography and in general mechanics. I needly hardly say how valuable a thing it is for a surgeon to be endowed with such gifts, for if to diagnostic acumen is conjoined a power of manipulation of instruments and a consummate knowledge of anatomy we have the highest qualities of a surgeon exhibited in one man.

Dr. Elsworth's death at the comparatively early age of 63 was due to his exhausting work during the great war, and he is one of many members of our profession who have fallen in the exercise of their duties to the State during the years of stress caused by that terrible conflict. I have known of several such cases where the work in "carrying on" during those eventful years sapped all the powers of life and left men worn out by their exertions. He joined the R.A.M.C. at an early stage of the war, and, in addition to his work in Swansea, had the charge of a large hospital at Cardiff, which he visited three days a week. His responsibilities were great, and he coped with them with characteristic energy, but the strain was immense, and I do not doubt that he has fallen a victim to it.

A COLLEAGUE in Swansea sends us the following appreciation:

Looking back on Dr. Elsworth's career, what struck one most of all was his almost superhuman physical and mental energy. The pace at which he got through a heavy morning's work at the hospital astounded anyone watching him for the first time; every movement was crisp and full of purpose—no hesitation, nothing slipshod, everything looked so very easy. But those who knew him realized that his wonderful quickness of hand and mind were both attributable to years of assiduous hard work and practice in his early days as demonstrator in the dissecting room at Edinburgh University, and later to the constant thought and close reasoning brought to bear in perfecting his surgical technique in general and his manipulative dexterity in particular. When gastro-jejunostomy was in its infancy he spent many an hour at home getting into touch with his needle and thread. While others talked he would be stitching away at pieces of cloth laid over the arm of his easy chair. "Woman's work," he called it, but just an instance of the sound foundations on which his somewhat unorthodox methods rested.

Starting in Swansea first of all as a general practitioner, he was soon able to devote himself entirely to surgery and to build up a well-merited and widespread reputation as a consultant. In these parts of the country a consultation or an urgent operation may mean a journey of anything up to two hundred miles. There are probably few roads in South or West Wales over which Dr. Elsworth has not driven his car by day or night. His hospital patients always came first. Never mind how urgent or attractive the call he would never be tempted to leave till his task in the wards or operating theatre was finished. His hospital work he used to tell us was his religion; never sparing himself, he tolerated no slackness on the part of his assistants. Like most men of his sturdy type he had the power of infecting all around him with his untiring energy and concentration, and of the many men who as house-surgeons came under his influence there must be few to-day who do not realize that they owe some part of their success to the inspiring example and teaching of Dr. Elsworth.

During the war Dr. Elsworth served with characteristic enthusiasm on the staff of the 3rd Western General Hospital at Cardiff. This extra call on the energies of a man who was already overworked was undoubtedly responsible for the cardiac and vascular troubles that brought about his sudden death. These were strenuous times for all doctors left in this country, and men carried on in a spirit that was hardly less heroic than that shown by their comrades overseas. The writer recalls one day that well supports this suggestion. Those of us who travelled to Cardiff with Dr. Elsworth could not help noticing that he looked ill—he had a septic finger and was evidently in pain and fit only for his bed. On arrival at the Military Hospital he collapsed in a long faint and had eventually to be carried back to Swansea in a motor car. That evening he was for some time in a critical condition; he took an anaesthetic and his finger was freely incised. He got back into harness far too soon, well knowing that this breakdown had left its mark, but in spite of all his friends could do he refused to take things more easily; he went ahead with indomitable pluck and finished his life as no doubt he would have wished it—quickly, and with no distressing days of inactivity.

ARTHUR HENRY ROBINSON, M.D.DURHAM,

Medical Superintendent, St. Mary (Islington) Infirmary.

ALL who knew Dr. Arthur Henry Robinson, medical superintendent of St. Mary (Islington) Infirmary, will have heard of his death with deep regret. It took place on May 31st, in his 68th year. He was about to retire from his appointment, but his death was, we believe, unexpected. He received his medical education at University College, London, took the diploma of M.R.C.S. in 1878, graduated M.B.Durham in the same year, and proceeded to the degree of M.D. in 1880. Soon after graduating he became resident surgeon and pathologist

to the Royal Infirmary, Hull, and surgeon to the Hull Dispensary, but for the greater part of his active life he had held office in various Poor Law infirmaries. He was appointed medical superintendent of the Mile End Infirmary in 1885, a post which he held for fifteen years; on resigning it he received a gratifying presentation from the staff. He was the first medical superintendent of the new St. Mary (Islington) Infirmary, which was opened by the present King and Queen, then Duke and Duchess of York, in July, 1900. To Dr. Robinson, therefore, fell the task of organizing the medical work, which he afterwards superintended down to the time of his death. He joined the Royal Artillery early in life, and when he eventually retired with the rank of surgeon-colonel he received the Volunteer Decoration. During the war he was officer in charge of the Highgate War Hospital.

Dr. Robinson kept himself well abreast of the progress of medicine and surgery, and contributed several papers to the *Transactions* of the Clinical, Pathological, and Medico-Chirurgical Societies, and to the medical press. He also issued a translation into English of Calot's book on orthopaedics. He was a kindly man who, having chosen his sphere of work, gave to it the best that was in him, finding recreation in literature and the study of medical history. He made many friends, by whom his memory will be held dear. The funeral took place from St. Peter's Church, Dartmouth Park Hill, on June 3rd. The very large attendance at the service included representatives of the Islington Board of Guardians and of the staff of the infirmary. Among those present was Mr. Walter Schroder, coroner for Central London, who at the Islington coroner's court on the same day bore testimony to the keen interest Dr. Robinson took in his work and his anxiety that patients in the infirmary should be treated with the highest skill and the greatest consideration.

PROFESSOR LAVERAN.

THE death of Professor Laveran removes one of those who at the end of the nineteenth century laid firmly the foundations of tropical medicine. He was president of the Academy of Medicine in Paris when it celebrated its centenary in December, 1920, and his friends believe that the preparations for that event and the celebration itself overtaxed his strength, for he never afterwards returned to work.

Charles Louis Alphonse Laveran was born in Paris on June 18th, 1845, the son of a military medical officer, who was at that time professor, and afterwards became director, of the French military medical school at Val-de-Grâce. Following in his father's footsteps, Laveran became a student at the military medical school at Strasbourg in 1863, held resident appointments in the hospitals of that city, and in 1867 took his degree with a thesis on the regeneration of nerves. In 1874 he won the position of professeur agrégé at the Val-de-Grâce school, and at the termination of that appointment in 1878 was sent to Algiers, where he served at Bône and Constantine; it was at the latter place that on November 6th, 1880, he first observed the haematozoon in the blood of a patient suffering from malaria. In a little book, scarcely more than a pamphlet, he described the various forms of the parasite as he had observed them in the blood, and illustrated his description with excellent freehand drawings. At a still earlier date certain writers had suggested that yellow fever was carried by mosquitos, and it was, we understand, a suggestion made by King in America in 1883, to the effect that mosquitos played some part in the etiology of malaria, that first turned Laveran's attention to the hypothesis, which in the following year he himself adopted. In that year, however, Laveran was appointed professor of military hygiene and clinical medicine at Val-de-Grâce, and his opportunity of personally verifying the hypothesis was lost.

After ten years' occupancy of the chair at Val-de-Grâce and three years in administrative work, a period during which he seems to have suffered eclipse, Laveran retired from the army and joined the Institut Pasteur, in which he afterwards became professor. At the Institut Laveran resumed his researches with regard to the haematozoa of malaria, and studied the parasitic sporozoa of animals. In much of this work he was associated with F. Mesnil, who helped him in the application of the experimental method in the problems with which he was concerned. Laveran published the first edition of his treatise on malaria in 1898 and issued a second in 1907. In 1904 he published in collaboration with Mesnil a book of over 400 pages on the trypanosomes; the second edition, issued in 1912, contained over 1,000 pages. For the next five years he gave himself mainly to the study of leishmania and the diseases produced by these organisms, a subject on which he published a treatise in 1917.

Laveran received many honours in his own and foreign countries; he was a member of the Académie des Sciences, president of the Société de Pathologie for twelve years, received the Nobel prize in 1907, and was elected a foreign Fellow of the Royal Society of London in 1916. He was an unremitting worker, and for forty-two years devoted all his energies to the study of pathogenic protozoa and their relation to disease in man and animals.

The death of Dr. FREDERICK TURTLE on June 6th at Kirkmead, Woodford, removes a veteran member of the medical profession. He was born as long ago as 1833 at Newcastle-under-Lyme, and was apprenticed, as was the custom in those days, to Dr. Tom Foster of Manchester. Subsequently he came to London and proceeded with his medical curriculum (which at that time consisted of three winter and two summer sessions) at the Middlesex Hospital. He obtained his first qualification, M.R.C.S.Eng., in 1855, and took the L.S.A. a year later. He held the posts of House-Surgeon at the Royal Free Hospital, and Resident Medical Officer to the Marylebone Infirmary. At the former institution he was associated with the late Thomas Henry Wakley, F.R.C.S., one of the sons of Thomas Wakley, founder of the *Lancet*. He graduated M.D.St. Andrews in 1862. After a short time in practice at Lamberhurst and Collett Place, E., Dr. Turtle succeeded the late Dr. Duchesne at Woodford in 1866, where he continued in active practice until 1902, a period of thirty-six years. Sympathetic in disposition, always a very energetic man, and gifted with an extraordinary natural memory, he conducted successfully a very large practice, and managed at the same time to keep up with current events in medicine. When he was a student, in the fifties, the clinical thermometer and stethoscope were not in general use: the short clinical thermometer was introduced in 1868 by Sir Clifford Allbutt. Dr. Turtle retired from practice twenty years ago, but retained his energy and excellent health until a few weeks ago, still finding interest in the new discoveries in medicine, and could occasionally be found reading in the Library of the Royal College of Surgeons. He was twice married and leaves a family of three sons and two daughters, two of the former being members of the medical profession. The funeral was attended by four medical men bearing his surname: Dr. F. W. Turtle and Dr. G. de B. Turtle (sons), Dr. James Turtle and Dr. W. R. M. Turtle (great-nephews).

Universities and Colleges.

UNIVERSITY OF OXFORD.

Rolleston Memorial Prize.

THE Rolleston Memorial Prize at Oxford, which is open to graduates of Oxford and Cambridge, under certain conditions, for original research in physiology, pathology, animal and vegetable morphology, and anthropology, has been awarded to Gavin R. de Beer, B.A., Demy of Magdalen College, Oxford.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 9th the following medical degrees were conferred:

M.D.—N. G. Horner, H. W. C. Vines.
M.B., B.CH.—W. F. Eberlie.
M.B.—H. E. Creswell.*

* Admitted by proxy.

UNIVERSITY OF LONDON.

APPLICATIONS for the Sir William Dunn Chair of Pathology, tenable at Guy's Hospital Medical School, salary at least £1,300 a year (no pension), must be received by June 22nd.

Dr. Doris Mackinnon has been appointed examiner in general biology at the first examination for medical degrees in July, 1922, in place of Professor A. Dendy resigned.

The following have been reappointed to act as examiners for the first and second examinations for medical degrees in the session 1922–23 (the chairmen of the respective boards are indicated by an asterisk):

Chemistry: Mr. H. C. H. Condy* (London Hospital Medical College) and Mr. J. A. Gardner (St. George's Hospital Medical School, London School of Medicine for Women, and Physiological Laboratory), together with the

two external examiners. *General Biology:* Dr. F. Drabble* (Northern Polytechnic Institute) and Dr. Doris Mackinnon (King's College), together with the external examiners. *Physics:* Mr. F. Womack* (St. Bartholomew's Hospital Medical College) and Mr. J. H. Brinkworth (St. Thomas's Hospital Medical School), together with the external examiners. *Anatomy:* Professor W. Wright* (London Hospital Medical College) and Professor E. Barclay-Smith (King's College), together with the external examiners. *Physiology:* Professor H. E. Roaf (London Hospital Medical College) and Professor W. D. Halliburton (King's College), together with the external examiners. *Pharmacology:* Dr. P. Hamill (St. Bartholomew's Hospital Medical College) and Dr. V. J. Woolley (St. Thomas's Hospital Medical School), together with the external examiners (Professor F. Ransom*).

The following footnote has been added to the regulations for the M.D. Examination (Branch III) for internal and external students:

In view of the similarity in the subjects of the examination for the M.D. Degree in Branch III under the regulations for December, 1922, and subsequently, and the subjects of the examinations for the diploma in psychological medicine, candidates are warned that the standard of the examination for the M.D. degree in psychological medicine is distinctly higher than that of the examination for the diploma in psychological medicine.

In connexion with the correspondence between the War Office and the University regarding the recruiting for general hospitals of the reconstructed Territorial Force, a conference was held on February 15th, when the Vice-Chancellor submitted to the Director of Medical Services a series of revised questions which, together with the replies thereto, were submitted to the Senate, which, at its meeting on May 24th, passed the following resolutions:

(1) That the Senate express their appreciation of the courtesy of the War Office in the arrangement and conduct of the conference which took place on February 15th, 1922, and in the subsequent negotiations; and that they express their willingness to co-operate in a scheme for recruiting the personnel of the reconstructed Territorial Force General Hospitals in accordance with the scheme outlined in the revised answers to the questions which were submitted with the Vice-Chancellor's letter to the Director-General, Army Medical Services (February 21st, 1922).
(2) That the War Office be informed that the Senate would also be willing to co-operate in a similar scheme respecting the provision of personnel for home hospitals, which it is understood is now in contemplation.

The Vice-Chancellor, Sir Sydney Russell-Wells, has been appointed chairman of the Anglo-American English Conference Committee; and Professor Sir John Rose Bradford, K.C.M.G., C.B., vice-chairman of the University College Committee.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on June 8th, when Sir Anthony Bowlby, President, was in the chair.

Diploma of Fellowship.

Diplomas were granted to the following twenty-four candidates found qualified for the Fellowship at the recent examination:

F. J. Anderson	W. B. Foley	S. T. Parker
Alice Bloomfield	W. A. Hewitson	B. H. Pidcock
J. F. C. Braine	S. L. Higgs	B. T. Rose
D. J. Browne	J. G. Jones	J. P. Ross
R. S. Corbett	W. McK. H. McCullagh	J. Victory
I. W. Corkey	G. Massie	H. M. Wharry
E. A. Crook	C. H. Medlock	W. E. Wilson
A. R. Dingley	D. F. A. Neilson	H. B. Yates

Election of Examiners.

The following were elected Examiners for the Fellowship for the ensuing year:

Anatomy: Arthur Ralph Thompson, John Ernest Sullivan Frazer, Gordon Gordon-Taylor, William Frederic Haslam. *Physiology:* Arthur Rendle Short, John Mellanby, David de Souza, Ffrangcon Roberts.

Conjoint Examination.

The Committee recommends the Council to elect the following candidates as the Examiners to be appointed by this College under the Examining Board in England for the ensuing year:

Elementary Biology.—Thomas William Shore, James P. Hill. *Anatomy.*—Frederick Gymer Parsons, David Hepburn, John Basil Hume. *Physiology.*—Herbert Eldon Roaf, Charles Arthur Lovatt Evans. *Midwifery.*—Cuthbert Lockyer, George Drummond Robinson, Charles Hubert Roberts, Eardley Lancelot Holland. *Diploma in Public Health.*—Sir Frederick William Andrewes, Francis Joseph Stevens. *Diploma in Tropical Medicine and Hygiene: Bacteriology.*—Hugh Basil Greaves Newham; *Diseases and Hygiene of Tropics.*—George Carmichael Low. *Diploma in Ophthalmic Medicine and Surgery.*—Sir John Herbert Parsons, Herbert Willoughby Lyle, Malcolm Langton Hepburn. *Diploma in Psychological Medicine.*—Sir Frederick Mott.

Examinership in Dental Surgery.

The President reported that Mr. W. H. Dolamore's term of office on the Board of Examiners in Dental Surgery would expire on July 25th next, and that the vacancy thus occasioned would be filled up at the Ordinary Council on July 27th.

GENERAL LUDENDORFF has recently received the honorary title of doctor of medicine from the University of Konigsberg.

THE University of Jena has conferred the honorary degree of Doctor of Medicine on Dr. Otto Henken, director of the department of medical optical instruments in the Zeiss factory.

Medical News.

THE annual meeting of the Durham University Medical Graduates' Association will be held at 11, Chandos Street, Cavendish Square, London, W., on Thursday, July 6th, at 5 p.m. The annual dinner will be held at the Café Royal, Regent Street, W., at 7.30 p.m. on the same day. Tickets, price 15s., excluding wines, may be obtained from the Honorary Secretary (South), Dr. J. K. Haworth, St. Mary's Hospital, W.2. All medical graduates of the university are cordially invited to the dinner.

THE summer meeting of the British Orthopaedic Association was attended by Sir Robert Jones, the President, and about forty members and visitors. It was held on Friday and Saturday, May 26th and 27th, at Sir William Treloar's Hospital for Crippled Children at Alton and at its annexe at Hayling Island. At Alton a lantern-slide demonstration was first given, showing in general the methods of treatment in the hospital, and a cinematograph of the application of a high plaster jacket. The college in which the technical training of crippled boys between the ages of 14 and 18 is carried out was then inspected; the principal trades taught are leather bag, case, and trunk making, tailoring, and boot making and repairing. A series of cases illustrating mechanical methods of treatment of spinal caries and hip disease was shown in the afternoon. On Saturday the association paid a visit to Hayling Island, where treatment by fresh air, sunlight, and sea bathing was demonstrated, and Professor Leonard Hill gave a short lecture on the physiological effects of sunlight.

THE late Sir Patrick Manson has left estate of net personalty of £57,085. He has bequeathed his medical library and scientific instruments and apparatus to Dr. Philip Manson-Bahr, and the residue of his property, subject to his wife's life interest, to his children or their issue in equal shares, directing that the share of his son David should be retained on trust for his said son and his wife and issue, and failing issue to his son David he left the reversion of his portion to the London School of Tropical Medicine in connexion with the Seamen's Hospital Society to conduct investigations into tropical diseases, such investigations to be conducted abroad as far as possible.

MR. VICTOR BONNEY will resume his "gynaecological talks" under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association, on Saturday, June 17th, at 12 noon, at the house of the Royal Society of Medicine, 1, Wimpole Street.

MEMBERS of the British Medical Association who play bowls will be interested in the announcement, in this week's SUPPLEMENT, of an international bowling match that has been arranged to take place on July 27th during the Annual Meeting at Glasgow.

DURING the annual general meeting of the Eugenics Education Society a conference on "The inheritance of mental qualities, good and bad," will be held at the rooms of the Royal Society, Burlington House, Piccadilly, on Tuesday, July 4th, at 5.30 p.m. The speakers will include Dr. Tredgold and Dr. C. Hubert Bond.

IN accordance with the proposal made in our correspondence columns on May 27th, p. 859, a society to be known as "The Medical Society for the Study of Venereal Diseases" was formed at a meeting held at the house of the Royal Society of Medicine on June 9th. Dr. David Watson of Glasgow, who presided over an attendance of about twenty-four, said that the object of the society would be to bring together for the reading of papers and discussion the many keen spirits now engaged in work upon venereal diseases. A formal motion to establish such a society was moved by Dr. Wilfrid Fox of St. George's Hospital, seconded by Dr. Alexander Wilson of Manchester, and carried unanimously. Some discussion took place as to whether the society would not gain its ends better by becoming a Section of the Royal Society of Medicine, but the feeling of most of those who spoke appeared to be in favour of independence; a final decision was postponed until the society had been got into working order. Certain rules were agreed to, including one which laid it down that the society should not express its corporate views on any subject of administrative or political interest, unless invited to do so by a department of the Government, and that in the event of any such invitation the views expressed should be those of 80 per cent. of the members voting on a referendum. It was also stipulated that the society should be composed exclusively of regularly qualified medical practitioners. It was agreed that the annual subscription should be 10s. 6d., but that if hereafter a journal was started it should be two and a half guineas. The Chairman said that as the cost of publishing a monthly

journal would be £500 or £600 a year, a membership of over 200 would have to be ensured before this responsibility could be shouldered, and the question was remitted to the council which is to be formed. The annual general meeting will be held each year in July, and the Chairman suggested that the same town and the same time might be chosen as those of the annual meeting of the British Medical Association. Local divisions of the society are to be formed and to appoint their own officers and hold meetings for the discussion of matters of clinical and administrative interest. Each division will also have two representatives on the council. The nucleus of a council was formed, and Dr. Robert Forgan, who has acted as secretary of the provisional committee, agreed to continue in that capacity until the first regular meeting of the society in July.

THE next meeting of the Medical Officers of Schools Association will be held at the house of the Medical Society of London on Monday, June 26th, at 5 p.m., when a discussion on the public health problem raised by children suffering from cardiac disorder will be opened by Professor F. S. Langmead, Dr. W. P. S. Branson, and Dr. James.

AS already announced, a graduate course on children's diseases, under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association, will be held from July 3rd to 8th at the East London Hospital for Children, Paddington Green Children's Hospital, Victoria Hospital for Children, Chelsea, Queen's Hospital for Children, the Middlesex Hospital, and St. Marylebone General Dispensary. The syllabus may be had from the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

PROFESSOR GEORGE H. F. NUTTALL, F.R.S., of Cambridge, has been elected a corresponding member of the Société de Biologie, Paris, and of the Society of American Bacteriologists.

THE next post-graduate lecture at the Royal Society of Medicine, under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association, will be delivered by Professor H. MacLean, on "Recent work on albuminuria and glycosuria," on Monday, June 19th, at 5 p.m.

THE sixteenth French Congress of Medicine will be held in Paris from October 12th to 14th under the presidency of Professor F. Widal, when the following subjects will be discussed: (1) Diagnosis between gastric and duodenal ulcer, introduced by Drs. Enriquez and Durand of Paris and Drs. Cramer and Saloz of Geneva. (2) The pathological significance of the abnormal forms of leucocytes, introduced by Drs. Sabrazès of Bordeaux and Lemaire of Louvain. (3) Prophylaxis and treatment of deficiency diseases, introduced by Drs. Weill and Mouriquand of Lyons and Rathery of Paris. Further information can be obtained from the general secretary, Dr. A. Lemierre, 217, Rue du Faubourg St. Honoré, Paris.

DR. T. GERALD GARRY, of Cairo, who a couple of years ago contributed to our columns a short account of Pistany (Bad Pöstyen), then stated that the mud used for the baths had a natural temperature of 140° F. He now writes to point out that Pistany is the only mud bath in Czecho-Slovakia which is naturally warm. The mud baths used at other places are, he states, artificially heated.

THE seventh annual meeting of the National Council for Combating Venereal Diseases will be held in the Robert Barnes Hall, 1, Wimpole Street, W.1, on Monday, June 19th, at 4 p.m. The President, Lord Gorell, will give a valedictory address.

TO the memory of Dr. Just Lucas-Championnière, who was one of the first French surgeons to study Lister's practice in Glasgow and by his example and persistent advocacy introduced the antiseptic system into France, a monument has been erected in the courtyard of the Hôtel-Dieu, Paris, at the entrance to the department he directed for so many years. The monument is the work of Professor Paul Richer, and was unveiled by M. Strauss, the Minister of Hygiene.

THE celebration of the Bretonneau centenary has been postponed from June to October. The exact date will be announced later.

AT the International Congress of Otology, to be held, as already announced, in Paris from July 19th to 22nd, there will be an exhibition of normal and pathological preparations, and also, we are informed, an exhibition of instruments, ancient and modern, associated with both otology and rhino-laryngology. The Faculty of Medicine is providing large rooms for the exhibition, and objects should be sent by June 20th, addressed to Drs. Mahu and Truffert, Faculté de Médecine, Rue de l'École de Médecine, Paris.

DR. LUCIEN CAMUS and Dr. Louis Martin of Paris have been made corresponding members of the Royal Academy of Medicine of Brussels.

THE Royal Society of Medical and Natural Sciences of Brussels will celebrate its centenary on June 22nd.

A POST-GRADUATE course in practical surgery will be held at the Salpêtrière Hospital, Paris, from June 19th to July 3rd, under the direction of Professor Gosset; the fee is 150 francs, and particulars may be had from the secretary of the Faculty of Medicine, Paris.

THE annual "Voyage d'Études Médicales" will start on August 26th and end on September 6th, under the direction of Professor Paul Carnot. The party will visit Bordeaux, Arcachon, Dax, Biarritz, Salies-de-Béarn, St-Jean-de-Luz, Cambo, Pau, Saint-Christau, Eaux-Chaudes, Eaux-Bonnes, Angelés, Lourdes, Cauterets, Luz, Saint-Sauveur, Gavarnie, Barèges, Bagnères-de-Bigorre, Luchon, and Toulouse. The subscription is 680 francs for the tour from Arcachon to Luchon. Application should be made to the secretary, Dr. M. Gerst, 94, Boulevard Flandrin, Paris.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

SURGEON REAR ADMIRAL W. EAMES, R.N.(ret.), writes: In reply to "T. I. M." I recommend West Southbourne, situated about five miles east of Bournemouth. It has pretty surroundings and a climate which is very salubrious, and has been described as "life-giving."

OXYURIS.

"J. M." writes: If Dr. Hackworth's patient can have his appendix removed I think he will not experience any difficulty later in expelling the oxyuris. Threadworms find in the appendix a safe asylum when measures are taken to expel them. In the intervals of treatment they come forth again. The appendix being inaccessible during the course of treatment, the best plan would be to remove it, and later again attempt one or other of the usual measures.

DR. C. E. PRATT, Assistant R.M.O. Bermondsey Medical Mission, writes: In reply to Dr. V. C. Hackworth's question about threadworms in a girl of 11, may I give you the routine treatment carried out at this clinic, where we get a great many cases, some of them remarkably stubborn? Our treatment is as follows:

The child is given an aperient, such as liquorice or syrup of senna (dose according to age), while at the clinic. The mother receives two powders, each consisting of equal parts of calomel and santonin (for a child of 11 we should give calomel gr. j, santonin gr. j), and also a bottle of liquid paraffin. With these she has a paper of written directions, which are carefully read over and explained to her. They are as follows:

1st day: No solid food after 5 p.m. A cup of milk at supper time.
2nd day: At 7.30 a.m. give the first powder, a drink of hot milk, and keep the child lying down. Light diet all day.
3rd day: Treatment as on 1st day.
4th day: Treatment as on 2nd day.
5th day: Ordinary food. Give liquid paraffin ʒiij at bed time.

Continue the liquid paraffin ʒiij every night for a fortnight. If worms still remain, treatment is begun again. Stools to be most carefully examined.

These directions are simple and very explicit, as they have to be in a district such as this, but our results have been very successful. The great thing is to get the mothers to persevere with treatment.

TREATMENT OF PSORIASIS.

"A. B. S." writes: A man, aged 47, has had generalized psoriasis for about sixteen years. At present the rash is red, raw, and angry-looking. Almost the whole of the skin from the waist downwards is affected, and also the arms from the elbows downwards. The disease has cleared up several times of its own accord during the sixteen years he has been troubled with it, but for the last four years he has had it constantly, and for the last six months he has been quite unable to work, owing to the burning and irritation of the parts affected. The rash used to be scaly, but there is very little scale formation now. In spite of vigorous chrysarobin treatment, oil of cade ointment, etc., he is getting worse. Even arsenic internally in large doses has been given a trial. Suggestions as to definite curative treatment will be thankfully received, as the poor man's condition is pitiable.

POTASSIUM PERMANGANATE IN HAEMORRHAGE.

DR. V. N. MEHTA (Viramgam, Bombay Presidency), writes to say that in an obstinate case of epistaxis which had resisted other methods the bleeding was immediately arrested by irrigating the nose with potassium permanganate solution, 20 grains to the pint. He adds that finely powdered crystals of the salt applied over the bleeding surfaces act as a very good haemostatic in minor operations.

INCOME TAX.

"R. H." was assessed for 1921–22 on the sum of £2,230, the average amount of the previous three years' profits. His profits for the year ending April 5th, 1922, were actually £1,130. Can he claim any reduction of the assessment?

*** A reduction to the amount of the year's profits can be claimed only if (*a*) the practice was set up later than April 5th, 1919, or (*b*) "R.H." has succeeded to the practice since that time and suffered in his professional earnings from some specific cause—for example, the coal strike of last summer.

"C." makes the following inquiry: B. joined A. as one-third partner in October, 1919; for the six months to March, 1920, B. paid tax on one-third of one-half of the total cash receipts, including back debts in which he did not share. In March, 1922, the partnership between A. and B. was dissolved, leaving A. in the practice. Should B. pay income tax to A. on back debts received after the dissolution of the partnership?

*** No; unless this is specifically provided for in the partnership deed. Payment of tax on the basis of cash receipts is a convenient method of meeting income tax liability, but those payments refer to the earnings of the period for which the assessments are made and not to the earnings in respect of which the cash is received. B. has apparently paid tax in respect of his earnings for the period from October, 1919, to March, 1922—except as regards the instalment due in July, 1922—and has no further liability.

"M. F. G. M." qualified in October, 1920, and commenced work as an assistant in November, 1920, earning £150 for the period to April, 1921. From then to April, 1922, the earnings were about £350. On what amount is he liable for the year 1921–22?

*** The amount assessable is determined by the earnings of the first twelve months; our correspondent cannot take the amount for the year to April 5th, 1921, as the basis for the following year, because he did not commence work as an assistant until November, 1920.

"D. E." is one of three partners who pay their own locomotion expenses, expended £200 for car renewal in 1920 apparently, but has been allowed £67 only on the assessment just received.

*** It has to be remembered that the renewal of a car is allowable as a professional expense, and that the basis of assessment is the excess of receipts over expenses on the average of three past years. For these reasons the full £200 cannot be claimed as a specific deduction for any financial year; it is only an item of expense in the determination of the profits for 1920 and consequently affects the 1921–22 assessment by one-third of £200 = £67 only. The converse, of course, would arise in the event of the receipt of any unusually large fee in any particular year.

"W. V. M." was demobilized in March, 1920, took up a position as assistant in October, 1920, and became a partner in October, 1921. On what basis should his declarations be made?

*** (1) For the year to April 5th, 1921, on the actual earnings of the year or on the average earnings of the three previous years, whichever is the less, and (2) for the year to April 5th, 1922, as regards the first six months on the earnings of that period, and as regards the second six months, on the basis of the income tax assessment—that is, if he has, say, one-third share of the partnership, profits as from October, 1920, then he would return for that half-year one-half of one-third of the amount assessed on the practice for 1921–22.

LETTERS, NOTES, ETC.

RHYTHMIC IRREGULARITY OF THE HEART.

DR. GEORGE H. VOS (Tottenham, N.) states that he has for over thirty years attended a lady, now aged 82, who has always had fair health, but has a gouty diathesis, as evidenced by the joints of hands and feet. When the pulse is counted five beats occur, then a pause, and then five more beats. If he keeps her interested in conversation the pulse becomes continuous, but the groups of five beats return when she becomes quiet. No murmurs can be heard. Our correspondent asks for an explanation.

COCKROACH IN THE NASAL PASSAGES.

DR. ARTHUR SHEARD (Huddersfield) writes: While at sea in the Mediterranean, on March 18th, 1922, I first noticed that I had contracted what I thought to be a slight "cold in the nose," characterized by a tendency to spit up mucus, and also occasionally to eject a small plug of tenacious mucus from the right nostril on forcibly blowing the nose. I experienced no real sense of irritation—in fact, the discomfort was so slight that I thought nothing of it at the time. There was no obstruction to breathing through either nostril. On the evening of March 19th, when composing myself to sleep, my head had no sooner reached the horizontal position than I experienced a slight fullness in the *left* nostril, suggesting that more mucus required to be discharged. Accordingly I closed the right nostril and blew forcibly, but this action increased the irritation to an acute "tickling" sensation, which at once caused an involuntary flow of tears from both eyes. There was no obstruction to breathing through either nostril, and digital examination of both nostrils failed to reveal anything. On cessation of the blowing of the nose the irritation ceased, so I dismissed the occurrence from my mind and slept soundly.

At 4.45 a.m. next morning I awoke with the recollection of having had a vivid dream, an experience which is unusual with me. I lay awake for a few minutes, and then remembered about my difficulty the previous evening, although now I felt nothing unusual in the nose. I again blew the nose forcibly several times, which action brought on a slight sense of fullness in the left nostril, but none of the sharp tickling sensation felt previously. After a few attempts I obtained sudden and complete relief by ejecting something from the left nostril into a handkerchief. After switching on the light, great was my astonishment to observe that I had ejected a full-grown cockroach. It was quite dead, and enmeshed in a film of clear tenacious mucus. Its body measured three-quarters of an inch in length.

The only conceivable time when the cockroach could have entered the nostril must have been during sound sleep, the most recent occasion for which was some twenty to twenty-four hours previous to its ejection. Most probably it had entered two or three days previously, which would account for the slight "cold" which I had experienced. Three features of this incident stand out as remarkable:

1. The entrance of the cockroach into the nose without causing any irritation or disturbance. During sleep I invariably breathe quietly through the nose with the mouth closed.
2. The comparatively long period (probably two days or more) during which the insect remained in the nasal passages without causing any appreciable inconvenience. Not once during this time had I even the desire to sneeze.
3. The ease with which the offending insect was ejected by forcible blowing of the nose.

I may say that cockroaches were a common pest on board my ship, but I have never heard of anyone having undergone an experience similar to mine described above.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, 31, and 32 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 28 and 29.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at p. *232*.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
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Whole single column (three columns to page) ...	7 10 0
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Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.